

KELLER ROHRBACK L.L.P.
Dean N. Kawamoto (SBN 232032)
1201 Third Avenue, Suite 3200
Seattle, WA 98101
Telephone: 206.623.1900
dkawamoto@kellerrohrback.com

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David W. Slayton,
Executive Officer/Clerk of Court,
By J. Covarrubias, Deputy Clerk

Attorney for Plaintiff

*[Fee exempt pursuant to
Govt. Code § 6103]*

Additional Counsel listed on signature page

SUPERIOR COURT OF THE STATE OF CALIFORNIA
COUNTY OF LOS ANGELES
(UNLIMITED JURISDICTION)

NATOMAS UNIFIED SCHOOL DISTRICT,

Case No. **23STCV31708**

Plaintiff,

COMPLAINT

v.

META PLATFORMS, INC., FACEBOOK
HOLDINGS, LLC, FACEBOOK OPERATIONS,
LLC, META PAYMENTS INC., META
PLATFORMS TECHNOLOGIES, LLC,
INSTAGRAM, LLC, SICULUS, INC., SNAP
INC., TIKTOK INC., BYTEDANCE INC.,
GOOGLE LLC, and YOUTUBE, LLC,

Defendants.

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I. INTRODUCTION

1. Meta Platforms, Inc., Facebook Holdings, LLC, Facebook Operations, LLC, Meta Payments Inc., Meta Platforms Technologies LLC, Instagram, LLC, Siculus, Inc., Snap Inc., TikTok Inc., ByteDance Inc., Google LLC, and YouTube, LLC (collectively, “**Defendants**”) design, market, promote, and operate social media platforms. Over the past decade, each has grown their respective platforms exponentially, from millions to billions of users. And Defendants have grown not just their user bases, but the frequency with which users use their platforms and the time each user spends on their platforms. Defendants’ growth is a product of choices they made to design and operate their platforms in ways that exploit the psychology and neurophysiology of their users into spending more and more time on their platforms. These techniques are both particularly effective and harmful to the youth audience Defendants have intentionally cultivated. The result—entirely foreseeable—is that today’s children and teenagers spend excessive amounts of time on Defendants’ platforms at great cost to their mental health. Defendants have created a mental health crisis among America’s youth.

2. Defendants have done so for profit. Their business models are based on advertisements. The more time users spend on their platforms, the more ads Defendants can sell.

3. Youth are central to Defendants’ business models. Youth are more likely to have a phone, to use social media, and to have downtime to spend on Defendants’ social media platforms. Plus, youth influence the behavior of their parents and younger siblings. As one Defendant put it, “los[ing] the teen foothold in the U.S.[.]” would mean “los[ing] the pipeline” for growth.¹

4. Defendants have maximized the time users—particularly youth—spend on their platforms by purposely designing, refining, and operating them to exploit the neurophysiology of the brain’s reward systems to keep users coming back, coming back frequently, and staying on the respective platforms for as long as possible.

5. Youth are particularly susceptible to Defendants’ manipulative conduct because

¹ Sheera Frenkel *et al.*, *Instagram Struggles with Fears of Losing Its ‘Pipeline’: Young Users*, N.Y. Times (Oct. 26, 2021), <https://www.nytimes.com/2021/10/16/technology/instagram-teens.html> [<https://perma.cc/SSL6-QUN2>].

1 their brains are not fully developed, and they consequently lack the same emotional maturity,
2 impulse control, and psychological resiliency that other, more mature users generally possess.

3 6. Defendants have successfully exploited the vulnerable brains of youth, hooking
4 tens of millions of students across the country into positive feedback loops of excessive and
5 problematic use of Defendants' social media platforms. Worse, the content Defendants curate
6 and direct to youth is too often harmful and exploitive (*e.g.*, promoting a "corpse bride" diet,
7 eating 300 calories a day, or encouraging self-harm).

8 7. Defendants' misconduct has been a substantial factor in causing a youth mental
9 health crisis, which has been marked by higher and higher proportions of youth struggling with
10 anxiety, depression, thoughts of self-harm, and suicidal ideation. The rates at which children
11 have struggled with mental health issues have climbed steadily since 2010 and, by 2018, made
12 suicide the second-leading cause of death for youth. The pandemic and the corresponding
13 increase in time youth spend on Defendants' platforms has only intensified this crisis.

14 8. The state of children's mental health led the American Academy of Pediatrics, the
15 American Academy of Child and Adolescent Psychiatry, and the Children's Hospital Association
16 to jointly declare a national emergency, and the U.S. Surgeon General to issue an advisory in
17 2021 "to highlight the urgent need to address the nation's youth mental health crisis."²

18 9. In his 2022 State of the Union Address, President Joe Biden also called attention
19 to the harm social media has wrought on youth and implored all to "hold social media platforms
20 accountable for the national experiment they're conducting on our children for profit."³

21 10. Continuing the Department of Health and Human Services' ongoing efforts to

22 ² AAP-AACAP-CHA Declaration of a National Emergency in Child and Adolescent Mental
23 Health, Am. Acad. Pediatrics (Oct. 19, 2021), <https://www.aap.org/en/advocacy/child-and-adolescent-healthy-mental-development/aap-aacap-cha-declaration-of-a-national-emergency-in-child-and-adolescent-mental-health/> [<https://perma.cc/JKF4-XZCT>]; U.S. Surgeon General
24 Issues Advisory on Youth Mental Health Crisis Further Exposed by COVID-19 Pandemic, U.S.
25 Dep't Health & Hum. Servs. (Dec. 7, 2021),
26 <https://public3.pagefreezer.com/browse/HHS.gov/30-12-2021T15:27/https://www.hhs.gov/about/news/2021/12/07/us-surgeon-general-issues-advisory-on-youth-mental-health-crisis-further-exposed-by-covid-19-pandemic.html>
27 [<https://perma.cc/G8AY-PCGA>].

28 ³ President Biden, *State of the Union Address* (Mar. 1, 2022) (transcript available at
<https://www.whitehouse.gov/state-of-the-union-2022/> [<https://perma.cc/A9EH-DV4QJ>]).

1 support President Joe Biden’s strategy to transform mental health care, the Surgeon General
2 released an advisory in early May 2023 on the country’s “[e]pidemic of [l]oneliness and
3 [i]solation,” where he outlined the profound health consequences of social disconnection and laid
4 out six pillars to improve connection across the country, one being the need to “[r]eform [d]igital
5 [e]nvironments.”⁴ Within its recommendations to reform social media environments for youth,
6 the advisory encourages companies to introduce “age-appropriate protections and identity
7 assurance mechanisms, to ensure safe digital environments that enable positive social
8 connection, particularly for minors.”⁵

9 11. Later that month, on May 23, 2023, the Surgeon General issued a second
10 advisory, calling for urgent action by policymakers, technology companies, researchers, families,
11 and young people to gain a better understanding of the impact of social media platforms, and
12 create “safer, healthier online environments to protect children.”⁶

13 12. Plaintiff Natomas Unified School District (“**Plaintiff**” or “**NUSD**”) brings this
14 suit to answer President Biden’s and the Surgeon General’s call to action. Youth in Plaintiff’s
15 community are experiencing the same mental health crisis observed nationally.

16 13. Students experiencing anxiety, depression, and other mental health issues perform
17 worse in school, are less likely to attend school, are more likely to engage in substance use, and
18 are more likely to act out, all of which directly affects Plaintiff’s ability to fulfill its educational
19 mission.

20 14. That is why Plaintiff, like 96 percent of other school districts in the United States,
21 provides mental health services to its students. For example, Plaintiff provides short term
22 counseling to its students and trains its teachers and staff to screen students for mental health
23

24 ⁴ *Our Epidemic of Loneliness and Isolation: The U.S. Surgeon General’s Advisory on the*
25 *Healing Effects of Social Connection and Community* at 51, U.S. Dep’t Health & Hum. Servs.
26 (2023), <https://www.hhs.gov/sites/default/files/surgeon-general-social-connection-advisory.pdf>
[<https://perma.cc/574S-4VJD>].

⁵ *Id.* at 63.

27 ⁶ *Surgeon General Issues New Advisory About Effects Social Media Use Has on Youth Mental*
28 *Health*, U.S. Dep’t Health & Hum. Servs. (May 23, 2023),
[https://www.hhs.gov/about/news/2023/05/23/surgeon-general-issues-new-advisory-about-](https://www.hhs.gov/about/news/2023/05/23/surgeon-general-issues-new-advisory-about-effects-social-media-use-has-youth-mental-health.html)
[effects-social-media-use-has-youth-mental-health.html](https://www.hhs.gov/about/news/2023/05/23/surgeon-general-issues-new-advisory-about-effects-social-media-use-has-youth-mental-health.html) [<https://perma.cc/FU9W-ZG2E>].

1 symptoms and refer them to services offered by Plaintiff's schools or other providers. But
2 Plaintiff needs a comprehensive, long-term plan and funding to drive a sustained reduction in the
3 record rates of anxiety, depression, suicidal ideation, and other tragic indices of the mental health
4 crisis its youth are experiencing at Defendants' hands.

5 15. As recognized by California Superintendent of Public Instruction Tony
6 Thurmond, there is a dire need to hire and staff mental health professionals in schools across
7 California because "school leaders and staff are seeing an increase in the number of students
8 experiencing depression, suicidal feelings, or other mental health challenges."⁷ Plaintiff, like
9 many school districts across the state and country, is at a breaking point. Meanwhile, Defendants
10 profit tremendously from their wrongful conduct. To remedy this wrong and hold Defendants
11 accountable, Plaintiff brings this action.

12 II. JURISDICTION AND VENUE

13 16. This Court has original jurisdiction over this action pursuant to Article VI,
14 Section 10 of the California Constitution.

15 17. This Court has general personal jurisdiction over Defendants because each are
16 headquartered and/or have their principal places of business in the State of California and have
17 continuous and systematic operations within the State of California.

18 18. The Court also has specific personal jurisdiction over Defendants because they
19 actively conduct substantial business in Los Angeles County and the State of California.
20 Defendants have purposefully availed themselves of the privilege of conducting business in this
21 State through the design, development, programming, promotion, marketing, operations, and
22 distribution of their platforms at issue in this lawsuit and have purposefully directed their
23 activities toward the State of California. Defendants have sufficient minimum contacts with the
24 State of California to render the exercise of jurisdiction by this Court permissible under
25 California law and the United States Constitution.

26 19. Venue is proper in this judicial district pursuant to California Code of Civil

27 ⁷ Kayla Jimenez, *California Leaders Rush to Improve Student Mental Health Care*, Mercury
28 News (Mar. 3, 2022), <https://www.mercurynews.com/2022/03/03/california-leaders-rush-to-improve-student-mental-health-care/> [<https://perma.cc/YB94-CHPF>].

Procedure Sections 395 and 395.5 because at least some Defendants reside in this County, their principal places of business are in this County, and a substantial part of the events or omissions giving rise to the claims at issue in this Complaint arose in this County.

III. PARTIES

A. Plaintiff

20. Plaintiff Natomas Unified School District is a public school district located just minutes north of downtown Sacramento, California. NUSD serves nearly 12,000 students in grades pre-kindergarten through 12th grade.⁸ NUSD operates fifteen schools,⁹ including one dual immersion school, four K–5th grade elementary schools, five K–8th grade schools, one 6th–8th grade middle school, and three 9th–12th grade high schools.¹⁰

B. Facebook and Instagram Defendants

21. Defendant Meta Platforms, Inc. (“**Meta**”), formerly known as Facebook, Inc., is a Delaware corporation with its principal place of business in Menlo Park, California.

22. Defendant Meta develops and maintains social media platforms, communication platforms, and electronic devices that are widely available to users throughout the United States. The platforms developed and maintained by Meta include Facebook (including its self-titled app, Marketplace, and Workplace), Messenger (including Messenger Kids), Instagram, and a line of electronic virtual reality devices and services called Meta Quest (collectively, “**Meta platforms**”).

23. Meta transacts or has transacted business in this District and throughout the United States. At all times material to this Complaint, acting alone or in concert with its subsidiaries (identified below), Meta has advertised, marketed, and distributed the Meta platforms to consumers throughout the United States. At all times material to this Complaint, Meta formulated, directed, controlled, had the authority to control, or participated in the acts and practices set forth in this Complaint.

⁸ *About Us*, Natomas Unified Sch. Dist., <https://natomasunified.org/about-us/#> (last visited Nov. 21, 2023).

⁹ *Id.*

¹⁰ *Our Schools*, Natomas Unified Sch. Dist., <https://natomasunified.org/about-our-schools/> (last visited Nov. 21, 2023).

24. Defendant Meta’s subsidiaries include Facebook Holdings, LLC; Facebook Operations, LLC; Meta Payments Inc.; Meta Platforms Technologies, LLC; Instagram, LLC; and Siculus, Inc.

25. Defendant Facebook Holdings, LLC (“**Facebook Holdings**”) was organized under the laws of the state of Delaware on March 11, 2020, and is a wholly owned subsidiary of Meta Platforms, Inc. Facebook Holdings is primarily a holding company for entities involved in Meta’s supporting and international endeavors, and its principal place of business is in Menlo Park, California. Defendant Meta is the sole member of Facebook Holdings.

26. Defendant Facebook Operations, LLC (“**Facebook Operations**”) was organized under the laws of the state of Delaware on January 8, 2012, and is a wholly owned subsidiary of Meta Platforms, Inc. The principal place of business of Facebook Operations is in Menlo Park, California. Defendant Meta is the sole member of Facebook Operations.

27. Defendant Meta Payments Inc. (“**Meta Payments**”) was incorporated in Florida on December 10, 2010, as Facebook Payments Inc. In July 2022, the entity’s name was amended to Meta Payments Inc. Meta Payments is a wholly owned subsidiary of Meta Platforms, Inc. Meta Payments manages, secures, and processes payments made through Meta, among other activities, and its principal place of business is in Menlo Park, California.

28. Defendant Meta Platforms Technologies, LLC (“**Meta Technologies**”) was organized under the laws of the state of Delaware as “Oculus VR, LLC” on March 21, 2014, and acquired by Meta on March 25, 2014. In November 2018, the entity’s name was amended to Facebook Technologies, LLC. In June 2022, the entity’s name was amended again, this time to Meta Platforms Technologies, LLC. Meta Technologies develops Meta’s virtual and augmented reality technology, such as the Meta Quest line of services, among other technologies related to Meta’s platforms, and its principal place of business is in Menlo Park, California. Defendant Meta is the sole member of Meta Technologies.

29. Defendant Instagram, LLC (“**Instagram**”) was founded by Kevin Systrom and Mike Krieger in October 2010 and is a social media platform designed for photo and video sharing. In April 2012, Meta purchased the company for approximately \$1 billion. Meta

1 reformed the limited liability company under the laws of the state of Delaware on April 7, 2012,
2 and the company's principal place of business is in Menlo Park, California. Defendant Meta is
3 the sole member of Instagram.

4 30. Defendant Siculus, Inc. ("**Siculus**") was incorporated in Delaware on October 19,
5 2011. Siculus is a wholly owned subsidiary of Meta, which supports Meta platforms by
6 constructing data facilities and other projects. Siculus's principal place of business is in
7 Menlo Park, California.

8 **C. Snap Defendant**

9 31. Defendant Snap Inc. ("**Snap**") is a Delaware corporation with its principal place
10 of business in Santa Monica, California. Snap transacts or has transacted business in this District
11 and throughout the United States. At all times material to this Complaint, acting alone or in
12 concert with others, Snap has advertised, marketed, and distributed the Snapchat social media
13 platform to consumers throughout the United States. At all times material to this Complaint,
14 Snap formulated, directed, controlled, had the authority to control, or participated in the acts and
15 practices set forth in this Complaint.

16 **D. TikTok Defendants**

17 32. Defendant TikTok Inc. was incorporated in California on April 30, 2015, with its
18 principal place of business in Culver City, California. TikTok Inc. transacts or has transacted
19 business in this District and throughout the United States. At all times material to this Complaint,
20 acting alone or in concert with others, TikTok Inc. has advertised, marketed, and distributed the
21 TikTok social media platform to consumers throughout the United States. At all times material to
22 this Complaint, acting alone or in concert with ByteDance Inc., TikTok Inc. formulated, directed,
23 controlled, had the authority to control, or participated in the acts and practices set forth in this
24 Complaint.

25 33. Defendant ByteDance Inc. ("**ByteDance**") is a Delaware corporation with its
26 principal place of business in Mountain View, California. ByteDance transacts or has transacted
27 business in this District and throughout the United States. At all times material to this Complaint,
28 acting alone or in concert with others, ByteDance has advertised, marketed, and distributed the

1 TikTok social media platform to consumers throughout the United States. At all times material to
2 this Complaint, acting alone or in concert with TikTok Inc., ByteDance formulated, directed,
3 controlled, had the authority to control, or participated in the acts and practices set forth in this
4 Complaint.

5 **E. YouTube Defendants**

6 34. Defendant Google LLC (“Google”) is a limited liability company organized under
7 the laws of the state of Delaware, and its principal place of business is in Mountain View,
8 California. Google LLC is a wholly owned subsidiary of XXVI Holdings Inc., and the managing
9 member of YouTube, LLC. Google LLC transacts or has transacted business in this District and
10 throughout the United States. At all times material to this Complaint, acting alone or in concert
11 with others, Google LLC has advertised, marketed, and distributed its YouTube video sharing
12 platform to consumers throughout the United States. At all times material to this Complaint,
13 acting alone or in concert with YouTube, LLC, Google LLC formulated, directed, controlled,
14 had the authority to control, or participated in the acts and practices set forth in this Complaint.

15 35. Defendant YouTube, LLC is a limited liability company organized under the laws
16 of the state of Delaware, and its principal place of business is in San Bruno, California.
17 YouTube, LLC is a wholly owned subsidiary of Google LLC. YouTube, LLC transacts or has
18 transacted business in this District and throughout the United States. At all times material to this
19 Complaint, acting alone or in concert with Defendant Google LLC, YouTube, LLC has
20 advertised, marketed, and distributed its YouTube social media platform to consumers
21 throughout the United States. At all times material to this Complaint, acting alone or in concert
22 with Google LLC, YouTube, LLC formulated, directed, controlled, had the authority to control,
23 or participated in the acts and practices set forth in this Complaint.

24 **IV. FACTUAL ALLEGATIONS**

25 **A. Millions of Youth Have Become Excessive and Problematic Users of Social Media**

26 36. Researchers studying the effect social media¹¹ has on the brain have shown that

27 ¹¹ The term “social media” is commonly used to refer to text, photos, videos, and ideas that are
28 exchanged among virtual communities. The interactive technologies that allow for the virtual
exchange of these media among networks of users are known as social media platforms.

1 social media exploits “the same neural circuitry” as “gambling and recreational drugs to keep
2 consumers using their products as much as possible.”¹²

3 37. As described below, each Defendant designed and marketed its exploitive social
4 media platform to be extremely popular with youth. And they have all been successful.
5 Approximately 90% of children ages 13–17 use social media.¹³ Younger children also regularly
6 use social media. One study reported 38% of children ages 8–12 used social media in 2021.¹⁴
7 Other studies reveal numbers as high as 49% of children ages 10–12 use social media and 32%
8 of children ages 7–9 use social media.¹⁵

9 38. The most popular of these platforms is YouTube. 95% of children ages 13-17, a
10 vast majority of this age group, have used YouTube.¹⁶

11 39. TikTok has skyrocketed in popularity with teenagers since its merger with
12 Musical.ly in 2018. As of July 2020, “TikTok classified more than a third of its 49 million *daily*
13 users in the United States as being 14 years old or younger[,]” and that likely underestimates
14 those under 14 and older teenagers (*i.e.*, those between 15 and 18 years old) because TikTok
15 claims not to know how old a third of its daily users are.¹⁷ TikTok is now the second most
16

17 ¹² *Social Media Addiction*, Addiction Ctr, <https://www.addictioncenter.com/drugs/social-media-addiction/#:~:text=Due%20to%20the%20effect%20that,when%20taking%20an%20addictive%20substance> [https://perma.cc/94AL-ML97] (last visited June 26, 2023).

18 ¹³ *Social Media and Teens*, Am. Acad. Child & Adolescent Psychiatry (Mar. 2018),
19 https://www.aacap.org/AACAP/Families_and_Youth/Facts_for_Families/FFF-Guide/Social-Media-and-Teens-100.aspx [https://perma.cc/VF8P-9UNT].

20 ¹⁴ Victoria Rideout *et al.*, *The Common Sense Census: Media Use by Tweens and Teens, 2021* at
21 5, Common Sense Media (2022),
22 https://www.common sense media.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf [https://perma.cc/L6ND-X7VR].

23 ¹⁵ *Sharing Too Soon? Children and Social Media Apps*, C.S. Mott Child.’s Hosp. Univ. Mich.
24 Health (Oct. 18, 2021),
25 https://mottpoll.org/sites/default/files/documents/101821_SocialMedia.pdf
26 [https://perma.cc/ZNA9-W4E5].

27 ¹⁶ Emily Vogels *et al.*, *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10,
28 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/> [https://perma.cc/BH7W-ZUPM].

¹⁷ Raymond Zhong & Sheera Frenkel, *A Third of TikTok’s U.S. Users May Be 14 or Under, Raising Safety Questions*, N.Y. Times (Sept. 17, 2020),
<https://www.nytimes.com/2020/08/14/technology/tiktok-underage-users-ftp.html>
[https://perma.cc/QQH8-SS5M].

popular social media platform with over 67% of children ages 13–17 having used the app.¹⁸

40. Instagram’s numbers are comparable to TikTok, with 62% of children ages 13–17 reporting they have used the app.¹⁹

41. Snapchat also remains popular with youth, with 59% of children ages 13–17 reporting they have used the app.²⁰

42. Facebook rounds out the five most popular social media platforms, with 32% of children ages 13–17 reporting they have used Facebook’s app or website.²¹

43. Teenagers who use these social media platforms are also likely to use them every day. One study estimates that 62% of children ages 13–18 use social media every day.²² An increasing number of younger children also use social media daily with 18% of children ages 8–12 reporting using a social media site at least once a day.²³

44. Daily use for many teenagers does not consist of logging onto a platform just once. Rather, many teenage users check social media repeatedly throughout the day. In one study, teenage users reported checking Snapchat thirty times a day on average.²⁴

45. Even more alarming, some teenagers never stop looking at social media.²⁵

¹⁸ Emily Vogels *et al.*, *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/> [<https://perma.cc/BH7W-ZUPM>].

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.*

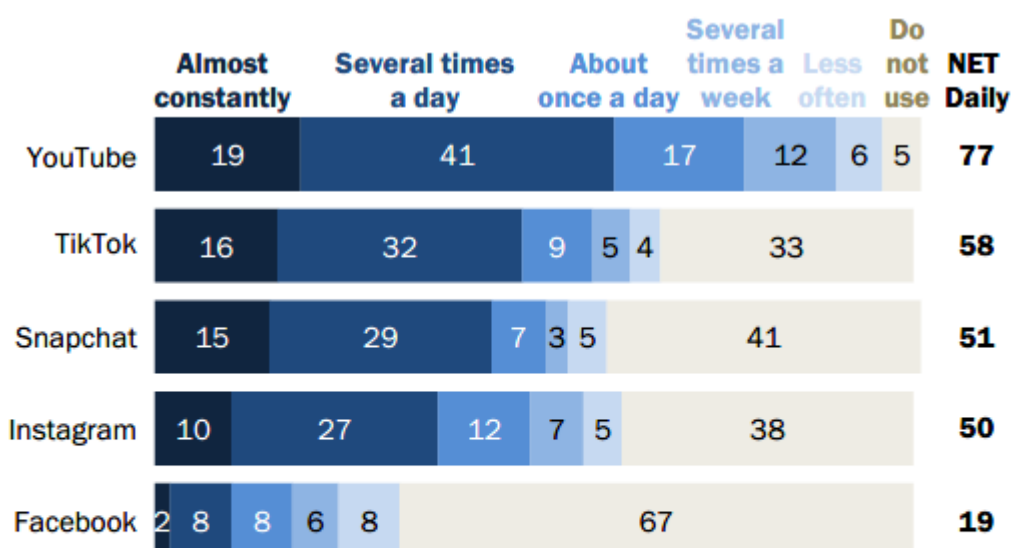
²² Victoria Rideout *et al.*, *The Common Sense Census: Media Use by Tweens and Teens, 2021* at 4, Common Sense Media (2022), https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf [<https://perma.cc/L6ND-X7VR>].

²³ *Id.* at 5.

²⁴ Erinn Murphy *et al.*, *Taking Stock with Teens, Fall 2021* at 13, Piper Sandler (2021), tinyurl.com/89ct4p88 [<https://perma.cc/XL9U-WH57>].

²⁵ Emily Vogels *et al.*, *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/> [<https://perma.cc/BH7W-ZUPM>].

46. As demonstrated in the chart below, nearly 20% of teens use YouTube almost constantly.²⁶ TikTok and Snapchat are close behind, with near constant use rates among teens at 16% and 15% respectively.²⁷ Meanwhile, 10% of teens use Instagram almost constantly.²⁸ And 2% of teens report using Facebook almost constantly.²⁹



Note: Teens refer to those ages 13 to 17. Those who did not give an answer are not shown.

Figures may not add up to the NET values due to rounding.

Source: Survey conducted April 14-May 4, 2022.

"Teens, Social Media and Technology 2022"

PEW RESEARCH CENTER

47. Teenagers are aware of the grip social media has on their lives yet still cannot stop using it; 36% of teenagers admit they spend too much time on social media.³⁰ And over half of teens say that giving up social media would be somewhat hard, with nearly one-in-five teens saying giving up social media would be very hard.³¹ And of the subgroup of teenagers who use at least one platform "almost constantly," 71% said giving up social media would be hard, with 32% saying giving up social media would be very hard.³²

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Id.*

³⁰ *Id.*

³¹ *Id.*

³² *Id.*

48. The more that teenagers use social media, the harder they find it to give up. Teenagers who say they spend too much time on social media are almost twice as likely to say that giving up social media would be hard as teens who see their social media usage as about right.³³

49. Another study shows that among teenagers who regularly use social media, 32% “wouldn’t want to live without” YouTube.³⁴ 20% of teenagers said the same about Snapchat; 13% said the same about both TikTok and Instagram; and 6% said the same about Facebook.³⁵

50. Despite using social media frequently, most youth do not enjoy it. Only 27% of boys and 42% of girls ages 8–18 reported enjoying social media “a lot” in 2021.³⁶

B. Research Has Confirmed the Harmful Effects of Social Media on Youth

51. Social media use—especially excessive use—has severe and wide-ranging effects on youth mental health. Social media use is linked to increases in mental, emotional, developmental, and behavior disorders. Independent research and internal data from these social media platforms show social media has a direct negative impact on teenagers’ mental health on various fronts.

52. In general, moderate or high rates of any electronic screen use are associated with lower psychological well-being for children and adolescents.³⁷ Those with high screen time (seven+ hours/day) are twice as likely to receive diagnoses of depression, anxiety, or need treatment for mental or behavior health conditions compared to low-screen-time users (one

³³ *Id.*

³⁴ Victoria Rideout *et al.*, *Common Sense Census: Media use by tweens and teens*, 2021 at 31, Common Sense Media (2022), https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf [<https://perma.cc/L6ND-X7VR>].

³⁵ *Id.*

³⁶ *Id.* at 34.

³⁷ Jean M. Twenge & W. Keith Campbell, *Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study*, 12 *Prev. Med. Rep.* 271–83 (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6214874/> [<https://perma.cc/F9VM-MBRW>]; Ariel Shensa *et al.*, *Social Media Use and Depression and Anxiety Symptoms: A Cluster Analysis*, 42(2) *Am. J. Health Behav.* 116–28 (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5904786/> [<https://perma.cc/PTD2-G6XL>].

hour/day).³⁸

53. Researchers have found that high-volume social media use is associated with increased levels of depression and anxiety for adults.³⁹ Social media has particularly detrimental effects on the mental health of adolescents. Depressive symptoms, suicide-related outcomes, and suicide rates among adolescents increased between 2010 and 2015, at the same time that youth use of social media increased.⁴⁰ Researchers examining the link between these increases found that adolescents who spent more time on screen activities were significantly more likely to have high depressive symptoms or have at least one suicide-related outcome, and that the highest levels of depressive symptoms were reported by adolescents with high social media use and fewer in-person social interactions.⁴¹

54. One of the primary reasons the use of social media is associated with depressive symptoms among adolescents is because it encourages unhealthy social comparison and feedback-seeking behaviors.⁴² Because adolescents spend a majority of their time on social media looking at other users' profiles and photos, rather than updating their own profiles, they are likely to engage in negative comparisons with their peers.⁴³ Specifically, adolescents are

³⁸ *Id.*

³⁹ Ariel Shensa *et al.*, *Social Media Use and Depression and Anxiety Symptoms: A Cluster Analysis*, 42(2) *Am. J. Health Behav.* 116–28 (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5904786/> [<https://perma.cc/PTD2-G6XL>].

Jean M. Twenge *et al.*, *Increases in Depressive Symptoms, Suicide-Related Outcomes, and Suicide Rates Among U.S. Adolescents After 2010 and Links to Increased New Media Screen Time*, 6 *Clinical Psych. Sci.* 3–17 (2017), <https://doi.org/10.1177/2167702617723376>.

⁴⁰ Fazida Karim *et al.*, *Social Media Use and Its Connection to Mental Health: A Systemic Review*, *Cureus Volume* 12(6) (June 15, 2020), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7364393/> [<https://perma.cc/PBC3-LF35>].

⁴¹ *Id.*

⁴² Jacqueline Nesi & Mitchell J Prinstein, *Using Social Media for Social Comparison and Feedback-Seeking: Gender and Popularity Moderate Associations with Depressive Symptoms*, 43 *J. Abnormal Child Psych.* 1427–38 (2015), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5985443/> [<https://perma.cc/ZZW4-J3B2>].

⁴³ *Id.*; see also Nino Gugushvili *et al.*, *Facebook use intensity and depressive symptoms: a moderated mediation model of problematic Facebook use, age, neuroticism, and extraversion* at 3, *BMC Psych.* 10, 279 (2022), <https://doi.org/10.1186/s40359-022-00990-7> [<https://perma.cc/Z3K2-ZWRC>] (explaining that youth are particularly vulnerable because they “use social networking sites for construing their identity, developing a sense of belonging, and for comparison with others”).

likely to engage in harmful upward comparisons with others they perceive to be more popular.⁴⁴

55. Clinicians have also observed a clear relationship between youth social media use and disordered eating behavior.⁴⁵ One study found that the more social media accounts an adolescent has, the higher their scores on evaluations of disordered eating behaviors and cognitions.⁴⁶ Additionally, the study found that, for girls, greater daily time spent using Instagram and Snapchat was associated with significantly higher scores on evaluations of disordered eating behaviors.⁴⁷

56. Social media use also contributes to sleep deprivation. Young adults who spend a lot of time on social media during the day or check it frequently throughout the week are more likely to suffer sleep disturbances than their peers who use social media infrequently.⁴⁸ In turn, disturbed and insufficient sleep is associated with poor health outcomes.⁴⁹ One study found that young children are losing approximately one night's worth of sleep every week, staying up to use social media or even waking themselves up in the middle of the night to check notifications, driven by the fear of missing out.⁵⁰

57. Defendants exacerbate the disruption of sleep by sending push notifications and emails either at night when children should be sleeping or during school hours when they should be studying, thereby prompting children to re-engage with Defendants' platforms at times when using them is harmful to their health and well-being.

⁴⁴ *Id.*

⁴⁵ Simon M. Wilksch *et al.*, *The relationship between social media use and disordered eating in young adolescents*, 53 *Int'l J. Eating Disorders* 96–106 (2020), <https://pubmed.ncbi.nlm.nih.gov/31797420/> [<https://perma.cc/VE58-DSAC>].

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ Jessica C. Levenson *et al.*, *The Association Between Social Media Use and Sleep Disturbance Among Young Adults*, 85 *Preventive Med.* 36–41 (Apr. 2016), <https://www.sciencedirect.com/science/article/abs/pii/S0091743516000025> [<https://doi.org/10.1016/j.ypmed.2016.01.001>].

⁴⁹ *Id.*

⁵⁰ *See, e.g.*, Beatrice Nolan, *Kids are waking up in the night to check their notifications and are losing about 1 night's worth of sleep a week, study suggests*, *Bus. Insider* (Sept. 19, 2022), <https://www.businessinsider.com/social-media-costing-children-one-night-sleep-study-2022-9> [<https://perma.cc/X4J4-KYTW>] (approximately 12.5% of children report waking up to check social media notifications).

58. Further, children are especially vulnerable to developing harmful behaviors because the prefrontal cortex is not fully developed in children and teens.⁵¹ Consequently, they find it particularly difficult to exercise the self-control required to regulate their own use of Defendants’ platforms. In this regard, self-regulation allows people to delay gratification, postponing an immediate reward for a better reward later. Adolescents’ low capacity for self-regulation means they are particularly vulnerable to the immediately pleasurable, but ultimately harmful, effects of the repeated dopamine spikes caused by an external stimulus, such as “likes” that activate the reward system in the brain.⁵²

59. As discussed in further detail *infra* Section IV.D, these reward-based learning systems “contribute to the maintenance of excessive usage patterns.”⁵³ Researchers investigating the “directionality between social networking [platforms] and problematic use,” have found that “increases in the intensity of use . . . predict[] problematic use.”⁵⁴ And empirical studies have found that problematic use is associated with “insomnia, stress, relationship dissatisfaction, anxiety, social anxiety, and depressive symptoms.”⁵⁵

60. In this regard, adolescents are especially vulnerable to long-term harm from Defendants’ platforms because excessive and problematic use can disrupt their brains’ development at a critical stage.

C. As a Result, America’s Youth are Facing a Mental Health Crisis

61. The number of youth using Defendants’ social media platforms and the intensity of their use has increased significantly since 2008, which has contributed to a wide range of negative effects on youth mental health. Over that same time the number of youth experiencing depression, contemplating suicide, seeking emergency room help for mental health issues and—tragically—committing suicide has skyrocketed.

⁵¹ Nino Gugushvili *et al.*, *Facebook use intensity and depressive symptoms: a moderated mediation model of problematic Facebook use, age, neuroticism, and extraversion* at 3, BMC Psych. 10, 279 (2022), <https://doi.org/10.1186/s40359-022-00990-7> [<https://perma.cc/Z3K2-ZWRC>].

⁵² *Id.*

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ *Id.* (collecting sources).

62. These issues led the United States Surgeon General to issue an advisory on the youth mental health crisis in December 2021.⁵⁶ In issuing the advisory, the Surgeon General noted, “[m]ental health challenges in children, adolescents, and young adults are real and widespread. Even before the pandemic, an alarming number of young people struggled with feelings of helplessness, depression, and thoughts of suicide — and rates have increased over the past decade.”⁵⁷

63. While the report highlights ways in which the COVID-19 pandemic has exacerbated mental health issues for American youth, it also highlights the mental health challenges youth faced before the pandemic. Specifically, the report notes that before the pandemic, “mental health challenges were the leading cause of disability and poor life outcomes in young people.”⁵⁸

64. In fact, before the pandemic, one in five children ages 3–17 in the United States had a mental, emotional, developmental, or behavior disorder.⁵⁹

65. From 2009 to 2019, the rate of high school students who reported persistent feelings of sadness or hopelessness increased by 40% (to one out of every three kids).⁶⁰ The proportion of kids seriously considering attempting suicide increased by 36% and the share creating a suicide plan increased by 44%.⁶¹

66. From 2007 to 2019, suicide rates among youth ages 10–24 in the United States

⁵⁶ *Protecting Youth Mental Health: The U.S. Surgeon General’s Advisory*, U.S. Dep’t Health & Hum. Servs. (Dec. 7, 2021), <https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf> [<https://perma.cc/SQZ7-NDFR>].

⁵⁷ *U.S. Surgeon General Issues Advisory on Youth Mental Health Crisis Further Exposed by COVID-19 Pandemic*, U.S. Dep’t Health & Hum. Servs. (Dec. 7, 2021), <https://public3.pagefreezer.com/browse/HHS.gov/30-12-2021T15:27/https://www.hhs.gov/about/news/2021/12/07/us-surgeon-general-issues-advisory-on-youth-mental-health-crisis-further-exposed-by-covid-19-pandemic.html> [<https://perma.cc/G8AY-PCGA>].

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Protecting Youth Mental Health: The U.S. Surgeon General’s Advisory* at 8, U.S. Dep’t Health & Hum. Servs. (Dec. 7, 2021), <https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf> [<https://perma.cc/SQZ7-NDFR>].

⁶¹ *Id.*

increased by 57%.⁶² By 2018, suicide was the second leading cause of death for youth ages 10–24.⁶³

67. From 2007 to 2016, emergency room visits for youth ages 5–17 rose 117% for anxiety disorders, 44% for mood disorders, and 40% for attention disorders.⁶⁴

68. This and other data led the American Academy of Pediatrics, the American Academy of Child and Adolescent Psychiatry, and the Children’s Hospital Association to join the Surgeon General and declare a national emergency in child and adolescent mental health in December 2021.⁶⁵

69. President Biden also addressed the mental health harms Defendants’ platforms have caused youth in his 2022 state of the union address⁶⁶ and again in 2023, demanding to “finally hold social media platforms accountable for [the] experimenting they’re doing – running [on] children for profit.”⁶⁷

70. The national youth mental health crisis continues to worsen. In May 2023, the Surgeon General issued a new advisory about the effects of social media on youth mental health based on the most recent research.⁶⁸

71. For example, the Surgeon General cites research that indicates that youth who

⁶² *Id.*

⁶³ AAP-AACAP-CHA Declaration of a National Emergency in Child and Adolescent Mental Health, Am. Acad. Pediatrics (Oct. 19, 2021), <https://www.aap.org/en/advocacy/child-and-adolescent-healthy-mental-development/aap-aacap-cha-declaration-of-a-national-emergency-in-child-and-adolescent-mental-health/> [<https://perma.cc/JKF4-XZCT>].

⁶⁴ Matt Richtel, *A Teen’s Journey Into the Internet’s Darkness and Back Again*, N.Y. Times (Aug. 22, 2022), <https://www.nytimes.com/2022/08/22/health/adolescents-mental-health-technology.html> [<https://perma.cc/SL22-JTMG>].

⁶⁵ AAP-AACAP-CHA Declaration of a National Emergency in Child and Adolescent Mental Health, Am. Acad. Pediatrics (Oct. 19, 2021), <https://www.aap.org/en/advocacy/child-and-adolescent-healthy-mental-development/aap-aacap-cha-declaration-of-a-national-emergency-in-child-and-adolescent-mental-health/> [<https://perma.cc/JKF4-XZCT>].

⁶⁶ President Biden, *State of the Union Address* (Mar. 1, 2022) (transcript available at <https://www.whitehouse.gov/state-of-the-union-2022/>) [<https://perma.cc/A9EH-DV4Q>].

⁶⁷ President Biden, *State of the Union Address* (Feb. 7, 2023) (transcript available at <https://www.whitehouse.gov/state-of-the-union-2023/>) [<https://perma.cc/H4P7-NY8P>].

⁶⁸ Surgeon General Issues New Advisory About Effects Social Media Use Has on Youth Mental Health, U.S. Dep’t Health & Hum. Servs. (May 23, 2023), <https://www.hhs.gov/about/news/2023/05/23/surgeon-general-issues-new-advisory-about-effects-social-media-use-has-youth-mental-health.html> [<https://perma.cc/FU9W-ZG2E>].

1 spend more than three hours per day on social media platforms face twice the risk of
2 experiencing poor mental health outcomes, such as symptoms of depression and anxiety.⁶⁹ And
3 the most recent data, as the Surgeon General notes, indicates social media use by young people is
4 “nearly universal,” with up to 95% of youth ages 13–17 using social media platforms and more
5 than 33% of youth saying they use social media “almost constantly.”⁷⁰ On average, the data
6 reveals that “8th and 10th graders now spend an average of 3.5 hours per day on social media.”⁷¹

7 72. The Surgeon General’s advisory highlights two primary ways in which social
8 media platforms can harm youth. First, “[e]xtreme, inappropriate, and harmful content continues
9 to be easily and widely accessible by children and adolescents,” which the advisory notes “can
10 be spread through direct pushes, unwanted content exchanges, and algorithmic designs.”⁷²
11 Second, “[e]xcessive and problematic use of social media can harm children and adolescents by
12 disrupting important healthy behaviors.”⁷³ As the advisory explains, “[s]ocial media platforms
13 are often designed to maximize user engagement, which has the potential to encourage excessive
14 use and behavioral dysregulation.”⁷⁴ Moreover, the advisory cites research indicating that “social
15 media exposure can overstimulate the reward center in the brain and, when the stimulation
16 becomes excessive, can trigger pathways comparable to addiction.”⁷⁵ Youth are more vulnerable
17 to these risks because their brains are still developing, and many self-identify as having
18 “addictions” to social media.⁷⁶ A study published in 2023 on the gender-specific impacts of
19 social media found that more than one-third of girls aged 11–15 say they feel “addicted” to
20

21
22 ⁶⁹ Social Media and Youth Mental Health: The U.S. Surgeon General’s Advisory at 6, U.S. Dep’t
23 Health & Hum. Servs. (2023), <https://www.hhs.gov/sites/default/files/sg-youth-mental-health-social-media-advisory.pdf> [<https://perma.cc/39QN-NAY7>].

24 ⁷⁰ *Id.* at 4.

25 ⁷¹ *Id.* at 7 (citation omitted).

26 ⁷² *Id.* at 8.

27 ⁷³ *Id.* at 9.

28 ⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Surgeon General Issues New Advisory About Effects Social Media Use Has on Youth Mental Health*, U.S. Dep’t Health & Hum. Servs. (May 23, 2023), <https://www.hhs.gov/about/news/2023/05/23/surgeon-general-issues-new-advisory-about-effects-social-media-use-has-youth-mental-health.html> [<https://perma.cc/FU9W-ZG2E>].

1 certain social media platforms.⁷⁷

2 73. “Our children,” as the Surgeon General explained in his advisory, “have become
3 unknowing participants in a decades-long experiment.”⁷⁸ The risk of harm to an entire generation
4 is too great to wait, especially in the face of what the Surgeon General described as “*ample*
5 indicators that social media can [] have a profound risk of harm to the mental health and well-
6 being of children and adolescents.”⁷⁹ Therefore, the Surgeon General issued a call in his 2023
7 advisory to “urgently take action to create safe and healthy digital environments that minimize
8 harm and safeguard children’s and adolescents’ mental health and well-being during critical
9 stages of development.”⁸⁰

10 74. The White House echoed these concerns, announcing in May 2023 that the
11 “United States is experiencing an unprecedented youth mental health crisis” and “there is now
12 *undeniable* evidence that social media and other online platforms have contributed to [this] youth
13 mental health crisis.”⁸¹ The White House explained that “online platforms often use manipulative
14 design techniques embedded in their products to promote addictive and compulsive use by young
15 people to generate more revenue.”⁸² The White House also specifically recognized the impact on
16 school districts, noting that “[s]ocial media use in schools is affecting students’ mental health
17 and disrupting learning.”⁸³

18 75. Given the totality of these findings, the Surgeon General urged social media
19 companies to take responsibility in creating safe online environments by changing their practices
20 and adopting specific policies to, for example:

21 ⁷⁷ *Id.*

22 ⁷⁸ *Social Media and Youth Mental Health: The U.S. Surgeon General’s Advisory* at 11, U.S.
23 Dep’t Health & Hum. Servs. (2023), [https://www.hhs.gov/sites/default/files/sg-youth-mental-](https://www.hhs.gov/sites/default/files/sg-youth-mental-health-social-media-advisory.pdf)
24 [health-social-media-advisory.pdf](https://www.hhs.gov/sites/default/files/sg-youth-mental-health-social-media-advisory.pdf) [<https://perma.cc/39QN-NAY7>].

25 ⁷⁹ *Id.* at 4 (emphasis added).

26 ⁸⁰ *Id.*

27 ⁸¹ *Fact Sheet: Biden-Harris Administration Announces Actions to Protect Youth Mental Health,*
28 *Safety & Privacy Online*, The White House (May 23, 2023),
[https://www.whitehouse.gov/briefing-room/statements-releases/2023/05/23/fact-sheet-biden-](https://www.whitehouse.gov/briefing-room/statements-releases/2023/05/23/fact-sheet-biden-harris-administration-announces-actions-to-protect-youth-mental-health-safety-privacy-online/)
[harris-administration-announces-actions-to-protect-youth-mental-health-safety-privacy-online/](https://www.whitehouse.gov/briefing-room/statements-releases/2023/05/23/fact-sheet-biden-harris-administration-announces-actions-to-protect-youth-mental-health-safety-privacy-online/)
[<https://perma.cc/22Q4-PHSP>] (emphasis added).

⁸² *Id.*

⁸³ *Id.*

- a. “Prioritize and leverage expertise in developmental psychology and user mental health and well-being in product teams to minimize risks of harm to children and adolescents[;]”⁸⁴
- b. Design platforms and algorithms to prioritize health and safety as the first principle;⁸⁵
- c. “[A]void design features that attempt to maximize time, attention, and engagement[;]”⁸⁶
- d. “Create effective and timely systems and processes to adjudicate requests and complaints” from youth, families, and educators “to address online abuse, harmful content and interactions, and other threats to children’s health and safety[;]”⁸⁷
- e. “Share data relevant to the health impact of platforms and strategies” with the public and independent researchers;⁸⁸
- f. “Conduct and facilitate transparent and independent assessments of the impact of social media products and services on children and adolescents[;]”⁸⁹
- g. Minimize risk of harm by creating default settings for children that are set to the highest safety and priority standards, written in easy-to-read and highly visible formats;⁹⁰ and
- h. “Adhere to and enforce age minimums...that respect the privacy of youth users.”⁹¹

D. Defendants Intentionally Target Youth Users with the Marketing, Design, and Operation of Their Social Media Platforms

76. This mental health crisis is no accident. It is the result of the Defendants’ deliberate choices and affirmative actions to design and market their social media platforms to attract youth.

⁸⁴ *Social Media and Youth Mental Health: The U.S. Surgeon General’s Advisory* at 16, U.S. Dep’t Health & Hum. Servs. (2023), <https://www.hhs.gov/sites/default/files/sg-youth-mental-health-social-media-advisory.pdf> [<https://perma.cc/39QN-NAY7>].

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.*

77. Defendants each run and operate social media platforms. The interactive features Defendants provide on their platforms are similar in many respects. For example, Facebook, Instagram, Snap, TikTok, and YouTube all offer tailored “feeds” of content curated by complex algorithms intended to learn users’ interests; ways to publicly express affirmation for such curated content through “likes,” comments, and sharing or reposting the content; and, in fact, each is known to copy the designs and features of one another.⁹² The salient features of Defendants’ social media platforms are described in more detail below.

78. Defendants’ make money from their social media platforms by using them as advertising platforms. Defendants collect data on their users’ viewing habits and behaviors and use that data to sell advertisers access to their youth and other users to allow those companies to promote their products. Advertisers pay a premium to target advertisements to specific categories of users, including youth.

79. Defendants view their population of adolescent and even pre-adolescent users as one of their most valuable commodities. Young users are central to Defendants’ business model and advertising revenue as an audience for advertisements because children are more likely than adults to use social media. Today, 95% of children ages 13–17 have cellphones,⁹³ 90% use social media,⁹⁴ and 28% buy products and services through social media.⁹⁵

80. To profit from these young users, Defendants intentionally market their platforms to youth and adolescents. For children under 13, the Children’s Online Privacy Protection Act (“COPPA”)⁹⁶ regulates the conditions under which platforms like Defendants’ can collect and use their information.

⁹² See, e.g., Kevin Hurler, *For Sites Like Instagram and Twitter, Imitation Is the Only Form of Flattery*, Gizmodo (Aug. 16, 2022), <https://www.gizmodo.com.au/2022/08/for-sites-like-instagram-and-twitter-imitation-is-the-only-form-of-flattery/> [<https://perma.cc/U5E9-8X6L>].

⁹³ Emily Vogels et al., *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/> [<https://perma.cc/BH7W-ZUPM>].

⁹⁴ *Social Media and Teens*, Am. Acad. Child & Adolescent Psychiatry (Mar. 2018), https://www.aacap.org/AACAP/Families_and_Youth/Facts_for_Families/FFF-Guide/Social-Media-and-Teens-100.aspx [<https://perma.cc/VF8P-9UNT>].

⁹⁵ Erinn Murphy et al., *Taking Stock with Teens, Fall 2021* at 13, Piper Sandler (2021), tinyurl.com/89ct4p88 [<https://perma.cc/XL9U-WH57>].

⁹⁶ See 15 U.S.C. §§ 6501-6506.

81. COPPA requires platforms that either target children under age 13 or have actual knowledge of users under age 13 to obtain “verifiable parental consent” prior to collecting and using information about children under age 13.⁹⁷ Defendants have blatantly violated COPPA or turned a blind eye to younger users on their platforms by leaving users to self-report their age.

82. Seeking to capture even younger audiences, Defendants have each offered “kid versions” of their platforms, which, while not collecting users’ information, are “designed to fuel [kids’] interest in the grown-up version.”⁹⁸

83. To maximize revenue, Defendants have intentionally designed and operated their platforms to maximize users’ screen time. Defendants have built features intended to exploit human psychology and designed complex algorithms driven by advanced artificial intelligence and machine-learning systems, progressively modifying their platforms in ways that promote excessive and problematic use—despite knowing these practices are harming young users.

84. One way Defendants maximize the time users spend on their platforms involves the design of feeds—whether of photos, videos, or sponsored or promoted content. Each Defendant uses algorithms to serve users personalized content for them to consume ad nauseum. Google’s former design ethicist, Tristan Harris, explained that this never-ending stream is designed to “keep [users] scrolling, and purposely eliminate any reason for [them] to pause, reconsider or leave.”⁹⁹ Defendants’ feeds take “an experience that was bounded and finite, and turn it into a bottomless flow that keeps going.”¹⁰⁰ This “flow state,” as psychologists describe it, “fully immerse[s]” users, distorts their perception of time, and “has been shown to be associated with problematic use of social networking sites.”¹⁰¹

⁹⁷ *Id.*

⁹⁸ Leonard Sax, *Is TikTok Dangerous for Teens?*, Inst. Fam. Stud. (Mar. 29, 2022), <https://ifstudies.org/blog/is-tiktok-dangerous-for-teens-> [\[https://perma.cc/RGX9-3JWC\]](https://perma.cc/RGX9-3JWC).

⁹⁹ Von Tristan Harris, *The Slot Machine in Your Pocket*, Spiegel Int’l (July 27, 2016), <https://www.spiegel.de/international/zeitgeist/smartphone-addiction-is-part-of-the-design-a-1104237> [\[html https://perma.cc/E328-D8WY\]](https://perma.cc/E328-D8WY).

¹⁰⁰ *Id.*

¹⁰¹ Nino Gugushvili et al., *Facebook use intensity and depressive symptoms: a moderated mediation model of problematic Facebook use, age, neuroticism, and extraversion at 3*, BMC Psych. 10, 279 (2022), <https://doi.org/10.1186/s40359-022-00990-7> [\[https://perma.cc/Z3K2-ZWRC\]](https://perma.cc/Z3K2-ZWRC).

85. A second way social media platforms manipulate users is through social reciprocity. “Reciprocity,” from a psychology perspective, refers to the powerful social phenomenon of how people respond to positive or, conversely, hostile actions. Reciprocity means that in response to friendly actions, people respond in a friendly manner and vice versa.¹⁰² Sociologist Phillip Kunz best illustrated the automatic nature of reciprocity through his Christmas card experiment. In the experiment, Mr. Kunz sent a group of complete strangers holiday cards with pictures of his family and included a brief note.¹⁰³ Those people, whom he had never met or communicated with before, reciprocated, flooding him with holiday cards.¹⁰⁴ The majority of the responses did not even ask Mr. Kunz who he was.¹⁰⁵ They simply responded to his initial gesture with a reciprocal action.

86. Reciprocity is why Facebook and Snapchat automatically tell a “sender when you ‘saw’ their message, instead of letting you avoid disclosing whether you read it. As a consequence, you feel more obligated to respond[,]” immediately.¹⁰⁶ Through these alerts and other push notifications, users feel psychologically compelled to return to the platform.

87. A third way Defendants manipulate users to keep using or coming back to their platforms is through the use of intermittent variable rewards (“**IVR**”). Also referred to as random rewards or random reinforcement, IVR is another principle of behavioral psychology that has been recognized and studied for decades. The rewards are variable because the behavior is not

¹⁰² Ernst Fehr & Simon Gächter, *Fairness and Retaliation: The Economics of Reciprocity*, 14(3) J. Econ. Persps. 159–81 (2000), https://www.researchgate.net/profile/Ernst-Fehr-2/publication/23756527_Fairness_and_Retaliation_The_Economics_of_Reciprocity/links/5eb024e945851592d6b87d3b/Fairness-and-Retaliation-The-Economics-of-Reciprocity.pdf [<http://dx.doi.org/10.2139/ssrn.229149>].

¹⁰³ Phillip R. Kunz & Michael Woolcott, *Season’s Greetings: From my status to yours*, 5(3) Soc. Sci. Rsch. 269–78 (Sept. 1976), <https://www.sciencedirect.com/science/article/abs/pii/0049089X7690003X?via%3Dihub> [[https://doi.org/10.1016/0049-089X\(76\)90003-X](https://doi.org/10.1016/0049-089X(76)90003-X)].

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ Von Tristan Harris, *The Slot Machine in Your Pocket*, Spiegel Int’l (July 27, 2016), <https://www.spiegel.de/international/zeitgeist/smartphone-addiction-is-part-of-the-design-a-1104237> [html <https://perma.cc/E328-D8WY>].

1 rewarded every time. Slot machines are the classic example of how IVR works.¹⁰⁷ With each pull
2 of the lever on a slot machine, the user may or may not win a prize. Slot machine winnings are
3 intermittent and vary in value. As casino owners know, IVR creates behaviors that are very hard
4 to stop, even when the rewards are no longer given out.

5 88. The neurobiology behind the effectiveness of IVR is well understood. IVR works
6 by spacing out dopamine-triggering stimuli with dopamine gaps—allowing for anticipation and
7 craving to develop, which strengthens the desire to engage in the activity with each release of
8 dopamine.

9 89. Defendants integrate IVR into the design and operations of their respective
10 platforms by “link[ing] a user’s action (like pulling a lever) with a variable reward.”¹⁰⁸ For
11 example, when “we swipe down our finger to scroll the Instagram feed, we’re playing a slot
12 machine to see what photo comes next.”¹⁰⁹ Meta also delays the time it takes to load the feed.
13 “This is because without that three-second delay, Instagram wouldn’t feel variable.”¹¹⁰ Without
14 that delay, there would be no time for users’ anticipation to build. In slot machine terms, there
15 would be “no sense of *will I win?* because you’d know instantly. So the delay isn’t the app
16 loading. It’s the cogs spinning on the slot machine.”¹¹¹ Each of the Defendants’ platforms
17 exploits this biochemical reaction among its users, typically using “likes,” “hearts,” or other
18 forms of approval that serve as the reward. *See infra* Section IV.D.1–4.

19 90. “Everyone innately responds to social approval, but some demographics, in
20
21
22

23 ¹⁰⁷ See, e.g., Julian Morgans, *The Secret Ways Social Media is Built for Addiction*, Vice (May 17,
24 2017), [https://www.vice.com/en/article/vv5jkb/the-secret-ways-social-media-is-built-for-](https://www.vice.com/en/article/vv5jkb/the-secret-ways-social-media-is-built-for-addiction)
[addiction](https://perma.cc/2HES-Y3AB) [<https://perma.cc/2HES-Y3AB>].

25 ¹⁰⁸ Von Tristan Harris, *The Slot Machine in Your Pocket*, Spiegel Int’l (July 27, 2016),
26 [https://www.spiegel.de/international/zeitgeist/smartphone-addiction-is-part-of-the-design-a-](https://www.spiegel.de/international/zeitgeist/smartphone-addiction-is-part-of-the-design-a-1104237.html)
[1104237.html](https://perma.cc/E328-D8WY) [<https://perma.cc/E328-D8WY>].

27 ¹⁰⁹ *Id.*

28 ¹¹⁰ Julian Morgans, *The Secret Ways Social Media is Built for Addiction*, Vice (May 17, 2017),
<https://www.vice.com/en/article/vv5jkb/the-secret-ways-social-media-is-built-for-addiction>
[\[https://perma.cc/2HES-Y3AB\]](https://perma.cc/2HES-Y3AB).

¹¹¹ *Id.*

particular teenagers, are more vulnerable to it than others.”¹¹²

91. Youth are especially vulnerable both to the ways in which Defendants manipulate users to maximize their “watch time,” and to the resulting harms. Children’s brains undergo a fundamental shift around age 10 that makes “preteens extra sensitive to attention and admiration from others.”¹¹³ Consequently, for young users of social media, Defendants’ use of IVR, reciprocity, and other “rewards” taps into this heightened sensitivity at a critical time in their development.

92. Adolescence is a period of rapid growth and development in the human brain, second only to infancy in that regard. As a result of many of these changes during adolescence, preteens and teens are highly sensitive to both positive and negative social stimuli. The structures of the brain “closely tied” to social media activity and that drive instinctual behavior begin to change.¹¹⁴ The ventral striatum is one of those structures. It receives a rush of dopamine and oxytocin, known as the “happy hormones[,]” whenever we experience social rewards.¹¹⁵ Between the ages of 10 and 12, the receptors for those happy hormones begin to multiply in this region of the brain, which makes compliments on a new hairstyle, laughter from a classmate, or other social rewards “start to feel a lot more satisfying.”¹¹⁶

93. These biological changes incentivize kids and teens to develop healthy social skills and connections. “But arriving at school in a new pair of designer jeans, hoping your crush will smile at you in the hallway, is worlds away from posting a video on TikTok that may get thousands of views and likes,” according to Mitch Prinstein, Chief Science Officer for the American Psychology Association.¹¹⁷

94. Part of what makes interactions on social media so different is that they are often

¹¹² Von Tristan Harris, *The Slot Machine in Your Pocket*, Spiegel Int’l (July 27, 2016), <https://www.spiegel.de/international/zeitgeist/smartphone-addiction-is-part-of-the-design-a-1104237> [html <https://perma.cc/E328-D8WY>].

¹¹³ Zara Abrams, *Why young brains are especially vulnerable to social media*, Am. Psych. Ass’n (Aug. 25, 2022), <https://www.apa.org/news/apa/2022/social-media-children-teens> [<https://perma.cc/J68J-JZPE>].

¹¹⁴ *Id.*

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ *Id.*

1 permanent and public in nature. There is no public ledger tracking the number of consecutive
2 days you have spoken to someone, like there is for Snap “streaks.” Similarly, “[a]fter you walk
3 away from a regular conversation, you don’t know if the other person liked it, or if anyone else
4 liked it[.]”¹¹⁸ Conversely, on Defendants’ platforms, kids, their friends, and even complete
5 strangers can publicly deliver or withhold social rewards in the form of likes, comments, views,
6 and follows.¹¹⁹

7 95. These social rewards release dopamine and oxytocin in the brains of youth and
8 adults alike but there are two key differences, as Chief Science Officer Prinstein explained:
9 “First, adults tend to have a fixed sense of self that relies less on feedback from peers. Second,
10 adults have a more mature prefrontal cortex, an area that can help regulate emotional responses
11 to social rewards.”¹²⁰

12 96. Adolescents, by contrast, are in a “period of personal and social identity
13 formation,” much of which “is now reliant on social media.”¹²¹ “Due to their limited capacity for
14 self-regulation and their vulnerability to peer pressure,” adolescents “are at greater risk of
15 developing mental disorder.”¹²²

16 97. Together, Meta, Snap, TikTok, and Google have designed, refined, marketed, and
17 operated their social media platforms to maximize the number of youth who use their platforms
18 and the time they spend on those platforms. Despite knowing that social media inflicts harms on
19 youth, Defendants have continued to create more sophisticated versions of their platforms with
20 features designed to keep users engaged and maximize the amount of time they spend using
21 social media. Defendants’ conduct in designing and marketing exploitive and manipulative

22 ¹¹⁸ *Id.*

23 ¹¹⁹ *Id.*

24 ¹²⁰ *Id.*

25 ¹²¹ Betul Keles *et al.*, *A systematic review: the influence of social media on depression, anxiety*
26 *and psychological distress in adolescents*, Int’l J. Adolescence & Youth (202) 25:1, 79–93
(Mar. 3, 2019),

27 [https://www.researchgate.net/publication/331947590_A_systematic_review_the_influence_of](https://www.researchgate.net/publication/331947590_A_systematic_review_the_influence_of_social_media_on_depression_anxiety_and_psychological_distress_in_adolescents/fulltext/5c94432345851506d7223822/A-systematic-review-the-influence-of-social-media-on-depression-anxiety-and-psychological-distress-in-adolescents.pdf)
28 [social_media_on_depression_anxiety_and_psychological_distress_in_adolescents/fulltext/5c94](https://www.researchgate.net/publication/331947590_A_systematic_review_the_influence_of_social_media_on_depression_anxiety_and_psychological_distress_in_adolescents/fulltext/5c94432345851506d7223822/A-systematic-review-the-influence-of-social-media-on-depression-anxiety-and-psychological-distress-in-adolescents.pdf)
[432345851506d7223822/A-systematic-review-the-influence-of-social-media-on-depression-](https://www.researchgate.net/publication/331947590_A_systematic_review_the_influence_of_social_media_on_depression_anxiety_and_psychological_distress_in_adolescents/fulltext/5c94432345851506d7223822/A-systematic-review-the-influence-of-social-media-on-depression-anxiety-and-psychological-distress-in-adolescents.pdf)
[anxiety-and-psychological-distress-in-adolescents.pdf](https://www.researchgate.net/publication/331947590_A_systematic_review_the_influence_of_social_media_on_depression_anxiety_and_psychological_distress_in_adolescents/fulltext/5c94432345851506d7223822/A-systematic-review-the-influence-of-social-media-on-depression-anxiety-and-psychological-distress-in-adolescents.pdf)
[\[https://doi.org/10.1080/02673843.2019.1590851\].](https://doi.org/10.1080/02673843.2019.1590851)

¹²² *Id.*

platforms, youth spend excessive amounts of time on Defendants' platforms.

98. Defendants' efforts worked. The majority of teenagers use the same five social media platforms: YouTube, TikTok, Instagram, Snapchat, and Facebook.¹²³ Each of these platforms individually boasts high numbers of teenage users.

1. Meta Intentionally Marketed to and Designed Their Social Media Platforms for Youth Users, Substantially Contributing to the Mental Health Crisis

a. The Meta Platform

99. Meta platforms, including Facebook and Instagram, are among the most popular social networking platforms in the world, with more than 3.6 billion users worldwide.¹²⁴

(i) The Facebook Platform

100. Facebook is a social networking platform that is one of Meta's platforms.

101. Facebook was founded in 2004 and has become the largest social network in the world. As of October 2021, Facebook had approximately 2.9 billion monthly active users, approximately 2 billion of whom use Facebook every day.¹²⁵

102. When Facebook was founded in 2004, only students at certain colleges and universities could use the social media platform, and verification of college enrollment was required to access Facebook.

103. In 2005, Facebook expanded and became accessible to students at more universities around the world, after which Meta launched a high school version of Facebook that also required an invitation to join.

104. Meta later expanded eligibility for Facebook to employees of several companies, including Apple and Microsoft, and added more universities to its network.

105. In September 2006, Facebook became available to all internet users. At the time,

¹²³ Emily Vogels *et al.*, *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10, 2022), <https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/> [<https://perma.cc/BH7W-ZUPM>].

¹²⁴ Felix Richter, *Meta Reaches 3.6 Billion People Each Month*, Statista (Oct. 29, 2021), <https://www.statista.com/chart/2183/facebook-mobile-users/> [<https://perma.cc/5NCB-AG9B>].

¹²⁵ See *id.*; S. Dixon, *Number of Daily Active Facebook Users Worldwide as of 3rd Quarter 2022 (in Millions)*, Statista (Oct. 27, 2022), <https://www.statista.com/statistics/346167/facebook-global-dau/> [<https://perma.cc/WC96-FA6Z>].

Meta claimed that it was open only to persons aged 13 and older with a valid email address; however, on information and belief, Meta did not in fact require verification of a user's age or identity and did not actually verify users' email addresses, such that underage users could easily register an account with and access Facebook.

106. Facebook then underwent a series of changes aimed at increasing user engagement and platform growth, without regard to user safety, including the following:

- a. In 2009, Facebook launched the "like" button;
- b. In 2011, Facebook launched Messenger, its direct messaging service, and started allowing people to subscribe to accounts outside of their "friends";
- c. In 2012, Facebook started showing advertisements in its news feed and launched a real-time bidding system through which advertisers could bid on users based on their visits to third-party websites;
- d. In 2014, Facebook's facial recognition algorithm (DeepFace) reached near-human accuracy in identifying faces;
- e. In 2015, Facebook made significant changes to its news feed algorithm to determine what content to show users and launched its live-streaming service;
- f. In 2016, Facebook launched games for its social media platform, so that users could play games without having to install new apps; and
- g. In 2017, Facebook launched Facebook Creator, an app for mobile video posts that assists with content creation.

(ii) The Instagram Platform

107. Instagram is a social media platform that launched in 2010, which Meta acquired for \$1 billion in April 2012.

108. Instagram enables users to share photos and videos with other users and to view other users' photos and videos. These photos and videos appear on users' Instagram "feeds," which are virtually bottomless, scrollable lists of content.

109. After being acquired by Meta, Instagram experienced exponential user growth, expanding from approximately 10 million monthly active users in September 2012 to more than

one billion monthly active users worldwide today, including approximately 160 million users in the United States.¹²⁶

110. Instagram’s user growth was driven by design and development changes to the Instagram platform that increased engagement at the expense of the health and well-being of Instagram’s users—especially the children using the platform.

111. For example, in August 2020, Instagram began hosting and recommending short videos to users, called Reels.¹²⁷ Like TikTok, Instagram allows users to view an endless feed of Reels that are recommended and curated to users by Instagram’s algorithm.

112. Instagram has become the most popular photo sharing social media platform among children in the United States—approximately 72% of children aged 13–17 in the United States use Instagram.¹²⁸

b. Meta Markets Its Platforms to Youth

113. To maximize the revenue generated from relationships with advertisers, Meta has expended significant effort to attract youth, to its platforms, including designing features that appeal to a teen and preteen audience. Meta explicitly targets teenagers for multiple reasons. In part, Meta views teenagers as a way to attract other potential users, such as by using teenagers to recruit parents who want to participate in their children’s lives as well as younger siblings who look to older siblings as models for which social media platforms to use and how to use them.¹²⁹

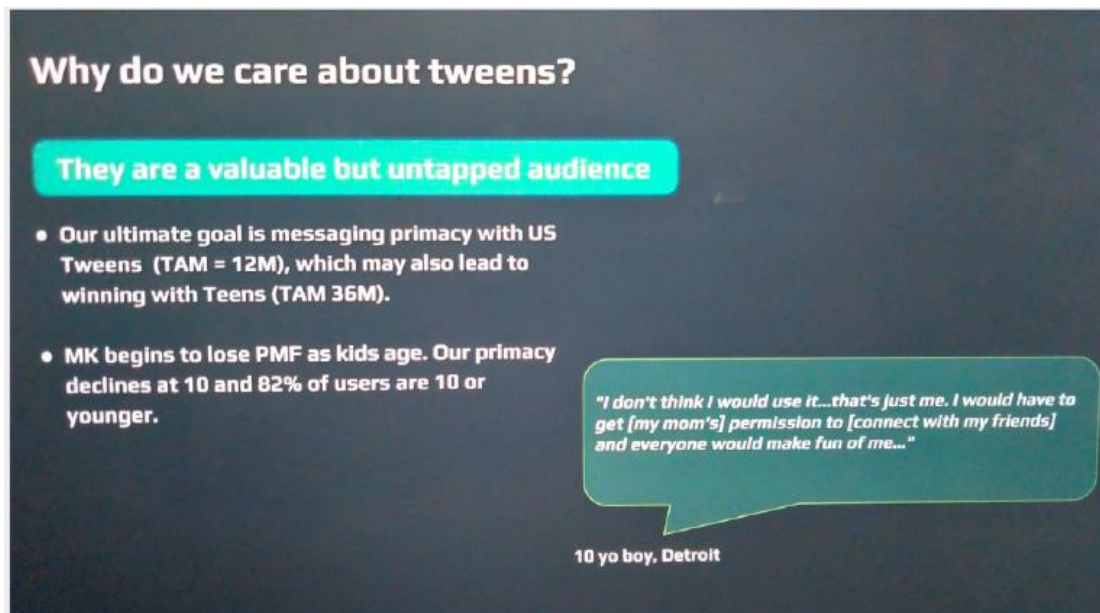
¹²⁶ S. Dixon, *Number of Instagram Users Worldwide from 2020 to 2025 (in Billions)*, Statista (May 23, 2022), <https://www.statista.com/statistics/183585/instagram-number-of-global-users/> [<https://perma.cc/6LZ4-BGBB>].

¹²⁷ *Introducing Instagram Reels*, Instagram (Aug. 5, 2020), <https://about.instagram.com/blog/announcements/introducing-instagram-reels-announcement> [<https://perma.cc/6FJX-3LV2>].

¹²⁸ Katherine Schaeffer, *7 Facts About Americans and Instagram*, Pew Rsch. Ctr. (Oct. 7, 2021), <https://www.pewresearch.org/fact-tank/2021/10/07/7-facts-about-americans-and-instagram/> [<https://perma.cc/C244-RDFH>].

¹²⁹ Sheera Frenkel *et al.*, *Instagram Struggles with Fears of Losing Its ‘Pipeline’: Young Users*, N.Y. Times (Oct. 26, 2021), <https://www.nytimes.com/2021/10/16/technology/instagram-teens.html> [<https://perma.cc/SSL6-QUN2>].

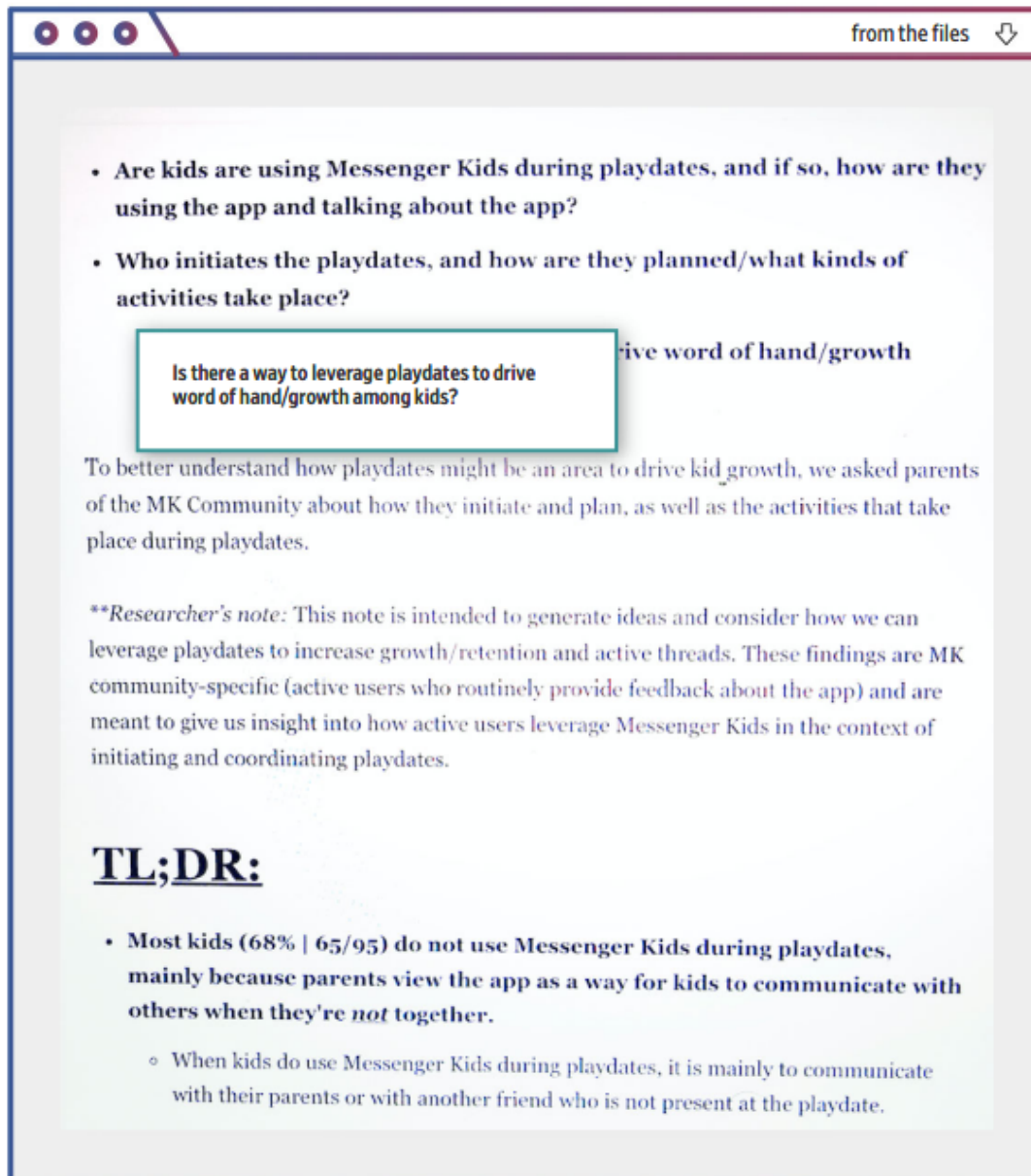
114. Most importantly, Meta recognizes that teenagers are the “pipeline” for the continued growth of the company. An internal Instagram strategy memo warned in 2020, “[i]f we lose the teen foothold in the U.S. we lose the pipeline”.¹³⁰ A 2018 marketing presentation declared the loss of teenage users to other social media platforms an “existential threat.”¹³¹ In response, starting in 2018, Instagram devoted almost all of its annual marketing budget to attracting teenagers—hundreds of millions of dollars annually.¹³²



¹³⁰ *Id.*

¹³¹ *Id.*

¹³² *Id.*



115. Meta also views preteens or “tweens” as a “valuable but untapped audience,” even contemplating “exploring playdates as a growth lever.”¹³³ Meta formed a team to study preteens, endeavored to create more products designed for them, and commissioned strategy papers regarding the “business opportunities” created.¹³⁴

¹³³ *Id.*

¹³⁴ Georgia Wells & Jeff Horwitz, *Facebook’s Effort to Attract Preteens Goes Beyond Instagram Kids, Documents Show; It has investigated how to engage young users in response to competition from Snapchat, TikTok*; ‘Exploring playdates as a growth lever, Wall St. J. (Sept. 28, 2021), <https://www.wsj.com/articles/facebook-instagram-kids-tweens-attract-11632849667> [<https://perma.cc/3QRQ-NU4C>].

1 116. For these reasons, the Meta platforms are designed to be used by children and are
2 actively marketed to children throughout the Meta markets in the United States. Meta advertises
3 to children through its own efforts as well as through advertisers that create and target
4 advertisements to children. Internal Meta documents establish that Meta spends hundreds of
5 millions of dollars researching, analyzing, and marketing to children to find ways to make its
6 platforms more appealing to these age groups and to maximize the time they spend on its
7 platforms, as these age groups are seen as essential to Meta’s long-term profitability and market
8 dominance.¹³⁵ For instance, after Instagram’s founders left Meta in September 2018, “Facebook
9 went all out to turn Instagram into a main attraction for young audiences,” and “began
10 concentrating on the ‘teen time spent’ data point,” in order to “drive up the amount of time that
11 teenagers were on the app with features including Instagram Live, a broadcasting tool, and
12 Instagram TV, where people upload videos that run as long as an hour.”¹³⁶

13 117. In fact, Meta’s acquisition of Instagram in 2012 was primarily motivated by its
14 desire to make up for declines in the use of Facebook by youth, and Meta views Instagram as
15 central to its ability to attract and retain young audiences. A Meta presentation from 2019
16 indicated that “Instagram is well positioned to resonate and win with young people,” and “[t]here
17 is a path to growth if Instagram can continue their trajectory.”¹³⁷

18 118. Although Meta’s policy is that children younger than 13 cannot register an
19 account, it lacks effective age-verification protocols—an issue long known to Meta. Since at
20 least 2011, Meta has known that its age-verification protocols are largely inadequate, estimating
21 at that time that it removed 20,000 children under age 13 from Facebook every day.¹³⁸ A decade

22 ¹³⁵ *Id.*

23 ¹³⁶ Sheera Frenkel *et al.*, *Instagram Struggles with Fears of Losing Its ‘Pipeline’: Young Users*,
N.Y. Times (Oct. 26, 2021), [https://www.nytimes.com/2021/10/16/technology/instagram-](https://www.nytimes.com/2021/10/16/technology/instagram-teens.html)
24 [teens.html](https://www.nytimes.com/2021/10/16/technology/instagram-teens.html) [<https://perma.cc/SSL6-QUN2>].

25 ¹³⁷ Georgia Wells *et al.*, *Facebook Knows Instagram Is Toxic for Teen Girls, Company*
Documents Show; Its own in-depth research shows a significant teen mental-health issue that
26 *Facebook plays down in public*, Wall St. J. (Sept. 14, 2021),
[https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-](https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739)
27 [documents-show-11631620739](https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739) [<https://perma.cc/3VKL-UW94>].

28 ¹³⁸ Austin Carr, *Facebook Booting “20,000” Underage Users Per Day: Reaction to Growing Privacy Concerns?*, Fast Co. (Mar. 22, 2011),

1 later, in 2021, an Instagram executive acknowledged that users under 13 can still “lie about
2 [their] age now,” to register an account.¹³⁹

3 119. Meta has yet to implement protocols to verify a user’s age. Meta also has
4 agreements with cell phone manufacturers and/or providers and/or retailers, who often pre-install
5 its platforms on mobile devices prior to sale and without regard to the age of the intended user of
6 each such device. That is, even though Meta is prohibited from providing the Meta platforms to
7 users under the age of 13, Meta actively promotes and provides underage users access to its
8 platforms by encouraging and allowing cell phone manufacturers to pre-install the platforms on
9 mobile devices indiscriminately. Consequently, approximately 11% of United States children
10 between the ages of 9 and 11 used Instagram in 2020,¹⁴⁰ despite Meta claiming to remove
11 approximately 600,000 underage users per quarter.¹⁴¹

12 120. Ultimately, as discussed above, Meta’s efforts to attract young users have been
13 successful. *See supra* Section IV.A.

14 **c. Meta Intentionally Maximizes the Time Users Spend on its Platforms**

15 121. Once users begin using its platforms, Meta employs a variety of strategies to keep
16 them there, using features that exploit the natural human desire for social interaction and the
17 neurophysiology of the brain’s reward systems to keep users endlessly scrolling, posting,
18 “liking,” commenting, and counting the number of “likes” and comments to their own posts. As
19

20 <https://www.fastcompany.com/1741875/facebook-booting-20000-underage-users-day-reaction-growing-privacy-concerns> [<https://perma.cc/8228-YGS7>].

21 ¹³⁹ Georgia Wells & Jeff Horwitz, *Facebook’s Effort to Attract Preteens Goes Beyond Instagram Kids, Documents Show; It has investigated how to engage young users in response to competition from Snapchat, TikTok; ‘Exploring playdates as a growth lever*, Wall St. J. (Sept. 28, 2021), <https://www.wsj.com/articles/facebook-instagram-kids-tweens-attract-11632849667> [<https://perma.cc/3QRQ-NU4C>].

24 ¹⁴⁰ Brooke Auxier et al., *Parenting Children in the Age of Screens: 1. Children’s engagement with digital devices, screen time*, Pew Rsch. Ctr. (July 28, 2020), <https://www.pewresearch.org/internet/2020/07/28/childrens-engagement-with-digital-devices-screen-time/> [<https://perma.cc/U7LH-D62Q>].

26 ¹⁴¹ Georgia Wells & Jeff Horwitz, *Facebook’s Effort to Attract Preteens Goes Beyond Instagram Kids, Documents Show; It has investigated how to engage young users in response to competition from Snapchat, TikTok; ‘Exploring playdates as a growth lever*, Wall St. J. (Sept. 28, 2021), <https://www.wsj.com/articles/facebook-instagram-kids-tweens-attract-11632849667> [<https://perma.cc/3QRQ-NU4C>].

discussed above, the rapidly developing adolescent brain, highly attuned to social rewards, is particularly vulnerable to such exploitation.

122. Many of the features Meta has designed utilize the well-established principle of intermittent variable rewards or IVR, discussed above, including one of its most defining features: the “Like” button. Meta knows “Likes” are a source of social comparison harm for many users, as detailed below. Several Meta employees involved in creating the Like button have since left Meta and have spoken publicly about the manipulative nature of Meta’s platforms and the harm they cause users.¹⁴²

123. Another way in which Meta employs IVR is through its push notifications and emails. These notifications alert users to activity related to their account, such as when someone else has “Liked” a post or when the user has been tagged in someone else’s post. Meta spaces out notifications of likes and comments into multiple bursts rather than notifying users in real time, which activates the brain’s reward circuitry and then creates dopamine gaps that leave users craving in anticipation for more. In this regard, Meta’s push notifications and emails are specifically designed to manipulate users to reengage with Meta’s platforms to increase user engagement regardless of a user’s health or wellbeing.

124. Other features of Meta’s platforms based on IVR principles include posts, comments, tagging, and the “pull to refresh” feature (which, as noted above, has the same effect on the brain as pulling the lever on a slot machines).

125. Still other design decisions utilize the principle of reciprocity, such as the use of visual cues to reflect that someone is currently writing a message (a feature designed to keep a user on the platform until they receive the message), and alerting users when a recipient has read their message (which encourages the recipient to respond and return to the platform to check for a response).

126. The Meta platforms are designed to encourage users to post content and to like,

¹⁴² See, e.g., Paul Lewis, *‘Our minds can be hijacked’: the tech insiders who fear a smartphone dystopia*, Guardian (Oct. 6, 2017), <https://www.theguardian.com/technology/2017/oct/05/smartphone-addiction-silicon-valley-dystopia> [<https://perma.cc/8DU4-MLJA>].

comment, and interact with other users' posts. Each new post that appears on a user's feed can function as a dopamine-producing social interaction in the user's brain. Similarly, likes, comments, and other interactions with the user's posts function as an even stronger dopamine-producing stimulus than does seeing new posts from other users. This in turn drives users to post more content they expect will generate even more likes and comments. In this regard, Meta has designed its platforms to effectively trap users—especially youth—in endless cycles of what Facebook whistleblower Frances Haugen called “little dopamine loops.”¹⁴³

d. Meta's Algorithms Are Manipulative and Harmful

127. Meta also employs advanced computer algorithms and artificial intelligence to make its platforms as engaging and habit forming as possible for users. For example, the Meta platforms display curated content and employ recommendations that are customized to each user by using sophisticated algorithms. The proprietary services developed through such algorithms include News Feed (a newsfeed of stories and posts published on the platform, some of which are posted by connections and others that are suggested by Meta's algorithms), People You May Know (algorithm-based suggestions of persons with common connections or background), Suggested for You, Groups You Should Join, and Discover (algorithm-based recommendations of groups). Such algorithm-based content and recommendations are pushed to each user in a steady stream as the user navigates the platform, as well as through notifications sent to the user's smartphone and email addresses when the user is disengaged with the platform.

128. Meta's algorithms are not based exclusively on user requests or even user inputs. Meta's algorithms combine information entered or posted by the user on the platform with the user's demographics and other data points collected and synthesized by Meta, make assumptions about that user's interests and preferences, make predictions about what else might appeal to the user, and then make very specific recommendations of posts and pages to view and groups to visit and join based on rankings that will optimize Meta's key performance indicators. In this

¹⁴³ Allison Slater Tate, *Facebook whistleblower Frances Haugen says parents make 1 big mistake with social media*, Today (Feb. 7, 2022), <https://www.today.com/parents/teens/facebook-whistleblower-frances-haugen-rcna15256> [<https://perma.cc/7P7V-CDNH>].

1 regard, Meta’s design dictates the way content is presented, such as its ranking and
2 prioritization.¹⁴⁴

3 129. Meta’s current use of algorithms in its platforms is driven and designed to
4 maximize user engagement. Over time, Meta has gradually transitioned away from chronological
5 ranking, which organized the interface according to when content was posted or sent, to
6 prioritize what Meta calls “Meaningful Social Interactions” (“**MSI**”), which emphasizes users’
7 connections and interactions such as likes and comments and gives greater significance to the
8 interactions of connections that appeared to be the closest to users. In order to do this, Meta
9 developed and employed an “amplification algorithm” to execute engagement-based ranking,
10 which considers a post’s likes, shares, and comments, as well as a respective user’s past
11 interactions with similar content, and exhibits the post in the user’s newsfeed if it otherwise
12 meets certain benchmarks.

13 130. Although Meta claims that the goal of this engagement-based ranking is “helping
14 you have more meaningful social interactions,”¹⁴⁵ Meta’s algorithms covertly operate on the
15 principle that intense reactions invariably compel attention. Because these algorithms measure
16 reactions and contemporaneously immerse users in the most reactive content, these algorithms
17 effectively work to steer users toward the most negative content, because negative content
18 routinely elicits passionate reactions. In other words, the algorithm is designed to prioritize the
19 number of interactions rather than the quality of interactions.

20 131. As set forth in greater detail below, Meta was well aware of the harmful content
21 that it was promoting but failed to change its algorithms because the inflammatory content that
22 its algorithms were feeding to users fueled their return to the platforms and led to more
23 engagement—which in turn helped Meta sell more advertisements that generate most of its
24 revenue.

25
26 ¹⁴⁴ See, e.g., Adam Mosseri, *Shedding More Light on How Instagram Works*, Instagram (June 8,
27 2021), [https://about.instagram.com/blog/announcements/shedding-more-light-on-how-](https://about.instagram.com/blog/announcements/shedding-more-light-on-how-instagram-works)
[instagram-works](https://perma.cc/8MTZ-238X) [<https://perma.cc/8MTZ-238X>].

28 ¹⁴⁵ Mark Zuckerberg, Facebook (Jan. 11, 2018, 4:28 PM),
<https://www.facebook.com/zuck/posts/10104413015393571?pnref=story>
[<https://perma.cc/F8VD-U6JU>].

1 132. Meta’s shift from chronological ranking to algorithm-driven content and
2 recommendations has changed the Meta platforms in ways that are profoundly dangerous and
3 harmful to children. Meta’s algorithms exploit vulnerabilities that are heightened in preteens and
4 teens due to their social and psychological development—and Meta designs its platforms with
5 these specific vulnerabilities in mind.

6 **e. Meta’s Harmful “Feeds”**

7 133. Both Facebook and Instagram show each user an algorithm-generated “feed” that
8 consists of a series of photos and videos posted by accounts that the user follows, along with
9 advertising and content specifically selected and promoted by Meta.

10 134. These feeds are virtually bottomless lists of content that enable users to scroll
11 endlessly without any natural end points that would otherwise encourage them to move on to
12 other activities. In this regard, “[u]nlike a magazine, television show, or video game,” the Meta
13 platforms only rarely prompt their users to take a break by using “stopping cues.”¹⁴⁶ Meta’s
14 “bottomless scrolling” feature is designed to encourages users to use its platforms for unlimited
15 periods of time.

16 135. Meta also exerts control over a user’s feed through certain ranking mechanisms,
17 escalation loops, and promotion of advertising and content specifically selected and promoted by
18 Meta based on, among other things, its ongoing planning, assessment, and prioritization of the
19 types of information most likely to increase user engagement.

20 136. As Senator Richard Blumenthal, Chair of the Subcommittee on Consumer
21 Protection, Product Safety, and Data Security, explained during one of a series of Senate
22 hearings in 2021 on “Protecting Kids Online,” Meta utilizes private information of its child users
23 to “precisely target [them] with content and recommendations, assessing what will provoke a
24 reaction,” including encouragement of “destructive and dangerous behaviors,” which is how
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27 ¹⁴⁶ See Zara Abrams, *How Can We Minimize Instagram’s Harmful Effects?*, Am. Psych. Ass’n
28 (Dec. 2, 2021), <https://www.apa.org/monitor/2022/03/feature-minimize-instagram-effects>
[\[https://perma.cc/XV58-GHJ4\]](https://perma.cc/XV58-GHJ4).

Meta “can push teens into darker and darker places.”¹⁴⁷ Whistleblower Frances Haugen testified that Meta’s “amplification algorithms, things like engagement based ranking . . . can lead children . . . all the way from just something innocent like healthy recipes to anorexia promoting content over a very short period of time.”¹⁴⁸ Meta thus specifically selects and pushes this harmful content on its platforms, for which it is then paid, and does so both for direct profit and also to increase user engagement, resulting in additional profits down the road.

137. As part of the Senate Subcommittee’s investigation into social media companies, Senators Richard Blumenthal, Marsha Blackburn and Mike Lee tested and confirmed the fact that Meta’s platforms’ recommendation-based feeds and features promote harmful content by opening test accounts purporting to be teenage girls. Senator Blumenthal stated that, “[w]ithin an hour all our recommendations promoted pro-anorexia and eating disorder content.”¹⁴⁹ Likewise, Senator Lee found that an account for a fake 13-year-old girl was quickly “flooded with content about diets, plastic surgery and other damaging material for an adolescent girl.”¹⁵⁰

138. Meta’s Instagram platform features a feed of “Stories,” which are short-lived photo or video posts that are accessible only for 24 hours. This feature encourages constant, repeated, and compulsive use of Instagram, so that users do not miss out on content before it disappears. As with other feeds, the presentation of content in a user’s Stories is generated by an algorithm designed by Meta to maximize the amount of time a user spends on the app.

139. Instagram also features a feed called “Explore,” which displays content posted by users not previously “followed.” The content in “Explore” is selected and presented by an algorithm designed by Meta to maximize the amount of time a user spends on the app. As with

¹⁴⁷ See *Facebook Whistleblower Frances Haugen Testifies on Children & Social Media Use: Full Senate Hearing Transcript* at 09:02, Rev (Oct. 5, 2021), <https://www.rev.com/blog/transcripts/facebook-whistleblower-frances-haugen-testifies-on-children-social-media-use-full-senate-hearing-transcript> [<https://perma.cc/WML5-286H>] (statement by Mr. Chairman Blumenthal).

¹⁴⁸ *Id.* at 37:34 (statement by Ms. Frances Haugen).

¹⁴⁹ Vanessa Romo, *4 Takeaways from Senators’ Grilling of Instagram’s CEO About Kids and Safety*, NPR (Dec. 8, 2021, 10:13 PM), <https://www.npr.org/2021/12/08/1062576576/instagrams-ceo-adam-mosseri-hears-senators-brush-aside-his-promises-to-self-poli> [<https://perma.cc/3CH4-GWJW>].

¹⁵⁰ *Id.*

other feeds, the Explore feature may be scrolled endlessly, and its algorithm will continually generate new recommendations, encouraging users to use the app for unlimited periods of time.

140. Further, Instagram also features another feed called “Reels,” which presents short video posts by users not previously followed. These videos play automatically, without input from the user, encouraging the user to stay on the app for indefinite periods of time. As with other feeds, Reels content is selected and presented by an algorithm designed by Meta to maximize the amount of time a user spends on the app.

f. For Years, Meta Has Been Aware That Its Platforms Harm Children

141. In an internal slide presentation in 2019, Meta’s own researchers, studying Instagram’s effects on children, concluded, “**We make body image issues worse for one in three teen girls[.]**”¹⁵¹ This presentation was one of many documents leaked by former Meta employee Frances Haugen to journalists at the *Wall Street Journal* and federal regulators in 2021.¹⁵² The *Wall Street Journal*’s reporting on the documents began in September 2021 and caused a national and international uproar.

142. The leaked documents confirmed what social scientists have long suspected, that social media platforms like Meta’s—and Instagram in particular—can cause serious harm to the mental and physical health of children. Moreover, this capacity for harm is by design—what makes the Meta platforms profitable is precisely what harms its young users.

143. Upon information and belief, at least as far back as 2019, Meta initiated a Proactive Incident Response experiment, which began researching the effect of Meta on the

¹⁵¹ Georgia Wells *et al.*, *Facebook Knows Instagram Is Toxic for Teen Girls, Company Documents Show; Its own in-depth research shows a significant teen mental-health issue that Facebook plays down in public*, Wall St. J. (Sept. 14, 2021), <https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739> [<https://perma.cc/3VKL-UW94>].

¹⁵² The *Wall Street Journal* and *Digital Wellbeing* published several of these documents in November 2021. See Paul Marsden, *The ‘Facebook Files’ on Instagram Harms—All Leaked Slides on a Single Page*, Digit. Wellbeing (Oct. 20, 2021), <https://digitalwellbeing.org/the-facebook-files-on-instagram-harms-all-leaked-slides-on-a-single-page/> [<https://perma.cc/XT2G-A77K>]. Gizmodo also started publishing these documents in November 2021. See Dell Cameron *et al.*, *Read the Facebook Papers for Yourself*, Gizmodo (Apr. 18, 2022), <https://gizmodo.com/facebook-papers-how-to-read-1848702919> [<https://perma.cc/7K26-G7GF>].

1 mental health of today’s children.¹⁵³ Meta’s own in-depth analyses show significant mental-
2 health issues stemming from the use of Instagram among teenage girls, many of whom linked
3 suicidal thoughts and eating disorders to their experiences on the app.¹⁵⁴ In this regard, Meta’s
4 researchers have repeatedly found that Instagram is harmful for a sizable percentage of teens that
5 use the platform.¹⁵⁵

6 144. In particular, the researchers found that “[s]ocial comparison,” or individuals’
7 assessment of their own value relative to that of others, is “worse on Instagram” for teens than on
8 other social media platforms.¹⁵⁶ One in five teens reported that Instagram “makes them feel
9 worse about themselves.”¹⁵⁷ Roughly two in five teen users reported feeling “unattractive,” while
10 one in ten teen users reporting suicidal thoughts traced them to Instagram.¹⁵⁸ Teens
11 “consistently” and without prompting blamed Instagram “for increases in the rate of anxiety and
12 depression.”¹⁵⁹ And although teenagers identify Instagram as a source of psychological harm,
13 they often lack the self-control to use Instagram less. Also, according to Meta’s own researchers,
14 young users are not capable of controlling their Instagram use to protect their own health.¹⁶⁰
15 Such users “often feel ‘addicted’ and know that what they’re seeing is bad for their mental health
16 but feel unable to stop themselves.”¹⁶¹

17 145. Similarly, in a March 2020 presentation posted to Meta’s internal message board,
18 researchers found that 32% of teen girls said that “when they felt bad about their bodies,
19

20
21 ¹⁵³ See *Facebook Whistleblower Testifies on Protecting Children Online*, C-SPAN (Oct. 5,
22 2021), [https://www.c-span.org/video/?515042-1/whistleblower-frances-haugen-calls-congress-](https://www.c-span.org/video/?515042-1/whistleblower-frances-haugen-calls-congress-regulate-facebook)
[regulate-facebook](https://perma.cc/5QN2-MKRX) [<https://perma.cc/5QN2-MKRX>].

23 ¹⁵⁴ See Georgia Wells *et al.*, *Facebook Knows Instagram Is Toxic for Teen Girls, Company*
24 *Documents Show*, Wall St. J. (Sept. 14, 2021, 7:59 AM),
[https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-](https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739?mod=hp_lead_pos7&mod=article_inline)
[documents-show-11631620739?mod=hp_lead_pos7&mod=article_inline](https://perma.cc/3VKL-UW94)
25 [<https://perma.cc/3VKL-UW94>].

26 ¹⁵⁵ *Id.*

27 ¹⁵⁶ *Id.*

28 ¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ *Id.*

Instagram made them feel worse.”¹⁶² 66% of teen girls and 40% of teen boys have experienced negative social comparison harms on Instagram.¹⁶³ Further, approximately 13% of teen girl Instagram users say the platform makes thoughts of “suicide and self harm” worse, and 17% of teen girl Instagram users say the platform makes “[e]ating issues” worse.¹⁶⁴ Meta’s researchers also acknowledged that “[m]ental health outcomes” related to the use of Instagram “can be severe,” including “Body Dissatisfaction,” “Body Dysmorphia,” “Eating Disorders,” “Loneliness,” and “Depression.”¹⁶⁵

146. Not only is Meta aware of the harmful nature of the Meta platforms, but the leaked documents also reveal that Meta is aware of the specific design features that lead to excessive use and harm to children. For instance, Meta knows that Instagram’s Explore, Feed, and Stories features contribute to social comparison harms “in different ways.”¹⁶⁶ Moreover, specific “[a]spects of Instagram exacerbate each other to create a perfect storm” of harm to users, and that the “social comparison sweet spot”—a place of considerable harm to users, particularly

¹⁶² *Id.*; *Teen Girls Body Image and Social Comparison on Instagram—An Exploratory Study in the U.S.*, Wall St. J. (Sept. 29, 2021), <https://digitalwellbeing.org/wp-content/uploads/2021/10/Facebook-Files-Teen-Girls-Body-Image-and-Social-Comparison-on-Instagram.pdf> [<https://perma.cc/7D2X-363R>]; see also *Hard Life Moments-Mental Health Deep Dive* at 14, Facebook (Nov. 2019), <https://about.fb.com/wp-content/uploads/2021/09/Instagram-Teen-Annotated-Research-Deck-1.pdf> [<https://perma.cc/6JNT-ZLJQ>]; Paul Marsden, *The ‘Facebook Files’ on Instagram arms – all leaked slides on a single page* at slide 14, Dig. Wellbeing (Oct. 20, 2021) <https://digitalwellbeing.org/the-facebook-files-on-instagram-harms-all-leaked-slides-on-a-single-page> [<https://perma.cc/XT2G-A77K>] (hard life moment – mental health deep dive).

¹⁶³ *Teen Girls Body Image and Social Comparison on Instagram—An Exploratory Study in the U.S.* at 9, Wall St. J. (Sept. 29, 2021), <https://digitalwellbeing.org/wp-content/uploads/2021/10/Facebook-Files-Teen-Girls-Body-Image-and-Social-Comparison-on-Instagram.pdf> [<https://perma.cc/7D2X-363R>].

¹⁶⁴ *Hard Life Moments-Mental Health Deep Dive* at 14, Facebook (Nov. 2019), <https://about.fb.com/wp-content/uploads/2021/09/Instagram-Teen-Annotated-Research-Deck-1.pdf> [<https://perma.cc/6JNT-ZLJQ>]; Paul Marsden, *The Facebook Files’ on Instagram arms – all leaked slides on a single page* at slide 14, Dig. Wellbeing (Oct. 20, 2021), <https://digitalwellbeing.org/the-facebook-files-on-instagram-harms-all-leaked-slides-on-a-single-page> [<https://perma.cc/XT2G-A77K>].

¹⁶⁵ *Teen Girls Body Image and Social Comparison on Instagram—An Exploratory Study in the U.S.* at 34, Wall St. J. (Sept. 29, 2021), <https://digitalwellbeing.org/wp-content/uploads/2021/10/Facebook-Files-Teen-Girls-Body-Image-and-Social-Comparison-on-Instagram.pdf> [<https://perma.cc/7D2X-363R>].

¹⁶⁶ *Id.* at 31.

1 teenagers and teen girls—lies at the center of Meta’s model and platforms’ features.¹⁶⁷ In this
2 regard, Meta’s researchers wrote that “[s]ocial comparison and perfectionism are nothing new,
3 but young people are dealing with this on an unprecedented scale,” and “[c]onstant comparison
4 on Instagram is ‘the reason’ why there are higher levels of anxiety and depression in young
5 people.”¹⁶⁸

6 **2. Snapchat Intentionally Marketed to and Designed Its Social Media Platform** 7 **for Youth Users, Substantially Contributing to the Mental Health Crisis**

8 **a. The Snapchat Platform**

9 147. Snapchat was created in 2011 by Stanford University students Evan Spiegel and
10 Bobby Murphy, who serve as Snap Inc.’s CEO and CTO, respectively.¹⁶⁹

11 148. Snapchat started as a photo sharing platform that allowed users to form groups
12 and share photos, known as “snaps,” that disappear after being viewed by the recipients.
13 Snapchat became well known for this self-destructing content feature. But Snapchat quickly
14 evolved from a simple photo-sharing app, as Snap made design changes and rapidly developed
15 new features aimed at, and ultimately increasing, Snapchat’s popularity among teenage users.

16 149. In 2012, Snap added video sharing capabilities, pushing the number of “snaps” to
17 50 million per day.¹⁷⁰ A year later, Snap added the “Stories” function, which allows users to
18 upload a rolling compilation of snaps that the user’s friends can view for 24 hours.¹⁷¹ The
19 following year, Snap added a feature that enabled users to communicate with one another in real
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21 ¹⁶⁷ *Id.* at 33.

22 ¹⁶⁸ See *Hard Life Moments-Mental Health Deep Dive* at 53, Facebook (Nov. 2019),
23 [https://about.fb.com/wp-content/uploads/2021/09/Instagram-Teen-Annotated-Research-Deck-](https://about.fb.com/wp-content/uploads/2021/09/Instagram-Teen-Annotated-Research-Deck-1.pdf)
24 [1.pdf](https://about.fb.com/wp-content/uploads/2021/09/Instagram-Teen-Annotated-Research-Deck-1.pdf) [<https://perma.cc/6JNT-ZLJQ>].

25 ¹⁶⁹ Katie Benner, *How Snapchat is Shaping Social Media*, N.Y. Times (Nov. 30, 2016),
26 <https://www.nytimes.com/2016/11/30/technology/how-snapchat-works.html>
27 [<https://perma.cc/6GCG-ZHYX>].

28 ¹⁷⁰ J.J. Colao, *Snapchat Adds Video, Now Seeing 50 Million Photos A Day*, Forbes (Dec. 14,
2012), [https://www.forbes.com/sites/jjcolao/2012/12/14/snapchat-adds-video-now-seeing-50-](https://www.forbes.com/sites/jjcolao/2012/12/14/snapchat-adds-video-now-seeing-50-million-photos-a-day/?sh=55425197631b)
[million-photos-a-day/?sh=55425197631b](https://www.forbes.com/sites/jjcolao/2012/12/14/snapchat-adds-video-now-seeing-50-million-photos-a-day/?sh=55425197631b) [<https://perma.cc/6DYM-QAGC>].

¹⁷¹ Ellis Hamburger, *Snapchat’s Next Big Thing: ‘Stories’ That Don’t Just Disappear*, Verge
(Oct. 3, 2013), [https://www.theverge.com/2013/10/3/4791934/snapchats-next-big-thing-stories-](https://www.theverge.com/2013/10/3/4791934/snapchats-next-big-thing-stories-that-dont-just-disappear)
[that-dont-just-disappear](https://www.theverge.com/2013/10/3/4791934/snapchats-next-big-thing-stories-that-dont-just-disappear) [<https://perma.cc/25YP-T7W4>].

1 time via text or video.¹⁷² It also added the “Our Story” feature, expanding on the original stories
2 function by allowing users in the same location to add their photos and videos to a single
3 publicly viewable content stream.¹⁷³ At the same time, Snap gave users the capability to add
4 filters and graphic stickers onto photos indicating a user’s location, through a feature it refers to
5 as “Geofilters.”¹⁷⁴

6 150. In 2015, Snap added a “Discover” feature that promotes videos from news outlets
7 and other content creators.¹⁷⁵ Users can watch that content by scrolling through the Discover
8 feed. After the selected video ends, Snapchat automatically plays other video content in a
9 continuous stream, which does not cease until a user manually exits the stream.

10 151. In 2020, Snap added the “Spotlight” feature through which it serves users “an
11 endless feed of user-generated content” that Snap curates from the 300 million daily Snapchat
12 users.¹⁷⁶

13 152. Today, Snapchat is one of the largest social media platforms in the world. By its
14 own estimates, Snapchat has 363 million daily users, including 100 million daily users in North
15 America.¹⁷⁷ Snapchat reaches 90% of people ages 13–24 in over twenty countries and reaches
16 nearly half of all smartphone users in the United States.¹⁷⁸

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18
19 ¹⁷² Romain Dillet, *Snapchat Adds Ephemeral Text Chat and Video Calls*, TechCrunch (May 1,
20 2014), <https://techcrunch.com/2014/05/01/snapchat-adds-text-chat-and-video-calls/>
21 [<https://perma.cc/3UAN-LY4N>].

22 ¹⁷³ Laura Stampler, *Snapchat Just Unveiled a New Feature*, Time (June 17, 2014),
23 <https://time.com/2890073/snapchat-new-feature/> [<https://perma.cc/E28M-8KLT>].

24 ¹⁷⁴ Angela Moscaritolo, *Snapchat Adds ‘Geofilters’ in LA, New York*, PC Mag. (July 15, 2014),
25 <https://www.pcmag.com/news/snapchat-adds-geofilters-in-la-new-york> [<https://perma.cc/NJ9E-3JYD>].

26 ¹⁷⁵ Steven Tweedie, *How to Use Snapchat’s New ‘Discover’ Feature*, Bus. Insider (Jan. 27,
27 2015), <https://www.businessinsider.com/how-to-use-snapchat-discover-feature-2015-1>
28 [<https://perma.cc/22ST-8HAL>].

¹⁷⁶ Salvador Rodriguez, *Snap is launching a competitor to TikTok and Instagram Reels*, CNBC
(Nov. 23, 2020), [https://www.cnbc.com/2020/11/23/snap-launching-a-competitor-to-tiktok-](https://www.cnbc.com/2020/11/23/snap-launching-a-competitor-to-tiktok-and-instagram-reels.html)
[and-instagram-reels.html](https://www.cnbc.com/2020/11/23/snap-launching-a-competitor-to-tiktok-and-instagram-reels.html) [<https://perma.cc/2HCW-KUFG>].

¹⁷⁷ *October 2022 Investor Presentation at 5*, Snap Inc. (Oct. 20, 2022),
<https://investor.snap.com/events-and-presentations/presentations/default.aspx>
[<https://perma.cc/8BDK-7S9V>].

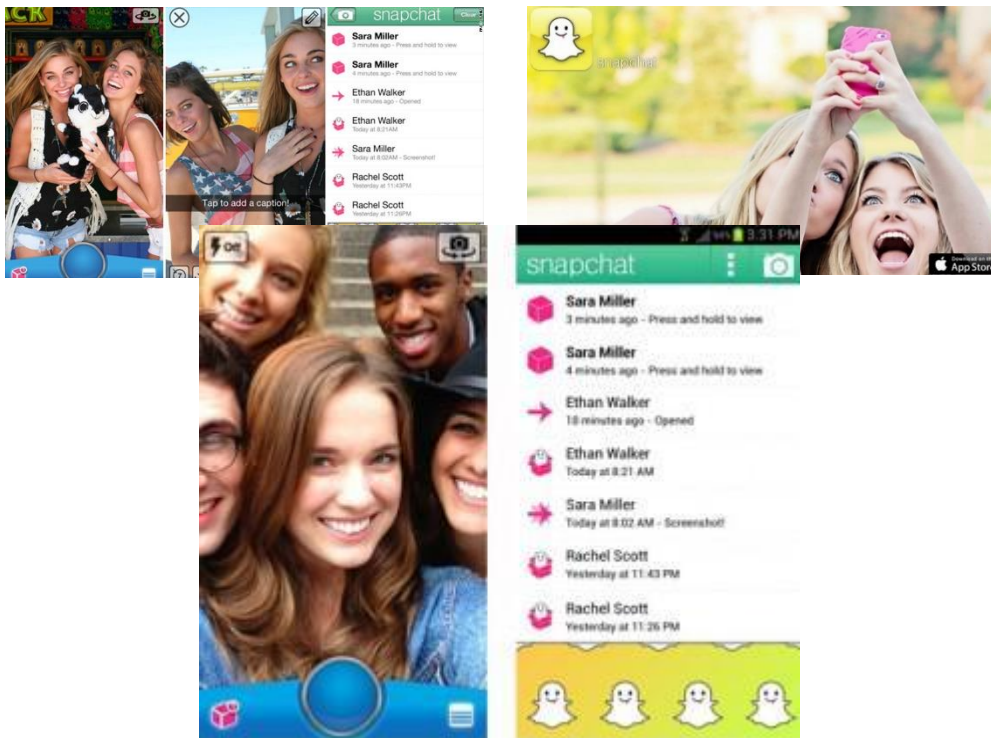
¹⁷⁸ *Id.* at 6–7.

b. Snap Markets Its Platform to Youth

153. Snapchat's commercial success is due to its advertising. In 2014, Snap began running advertisements on Snapchat.¹⁷⁹ Since then, Snapchat's business model has revolved around its advertising revenue, which has boomed. Snap now expects to generate \$4.86 billion in Snapchat advertising revenue for 2022.¹⁸⁰

154. Snap specifically markets Snapchat to children ages 13–17 because they are a key demographic for Snap's advertising business. Internal documents describe users between the ages of 13–34 as “critical” to Snap's advertising success because of the common milestones achieved within that age range.¹⁸¹

155. While Snap lumps teenagers in with younger adults in its investor materials, Snap marketing materials features young models that reveal its priority market:



¹⁷⁹ Sara Fischer, *A timeline of Snap's advertising, from launch to IPO*, Axios (Feb. 3, 2017), <https://www.axios.com/2017/12/15/a-timeline-of-snaps-advertising-from-launch-to-ipo-1513300279> [<https://perma.cc/7XTY-2AXS>].

¹⁸⁰ Bhanvi Staija, *TikTok's ad revenue to surpass Twitter and Snapchat combined in 2022*, Reuters (Apr. 11, 2022), <https://www.reuters.com/technology/tiktoks-ad-revenue-surpass-twitter-snapchat-combined-2022-report-2022-04-11/> [<https://perma.cc/L8U2-Q9ZZ>].

¹⁸¹ *October 2022 Investor Presentation* at 27, Snap Inc. (Oct. 20, 2022), <https://investor.snap.com/events-and-presentations/presentations/default.aspx> [<https://perma.cc/8BDK-7S9V>].

156. In addition to its marketing, Snap has targeted a younger audience by designing Snapchat in a manner that older individuals find hard to use.¹⁸² The effect of this design is that Snapchat is a platform where its young users are insulated from older users, including their parents. As Snap’s CEO explained, “[w]e’ve made it very hard for parents to embarrass their children[.]”¹⁸³

157. Snap also designed Snapchat as a haven for young users to hide content from their parents by ensuring that photos, videos, and chat messages quickly disappear. This design further insulates youth from adult oversight.

158. Moreover, Snap added as a feature the ability for users to create cartoon avatars modeled after themselves.¹⁸⁴ By using an artform generally associated with and directed at younger audiences, Snap further designed Snapchat to entice teenagers and younger children.

159. In 2013, Snap also marketed Snapchat specifically to children under 13 through a feature it branded “SnapKidz.”¹⁸⁵ This feature—part of the Snapchat platform—allowed children under 13 to take photos, draw on them, and save them locally on the device.¹⁸⁶ Kids could also send these images to others or upload them to other social media sites.¹⁸⁷

160. While SnapKidz feature was later discontinued and Snap purports to now prohibit users under the age of 13, its executives have admitted that its age verification “is effectively useless in stopping underage users from signing up to the Snapchat app.”¹⁸⁸

¹⁸² See Hannah Kuchler & Tim Bradshaw, *Snapchat’s Youth Appeal Puts Pressure on Facebook*, Fin. Times (Aug. 21, 2017), <https://www.ft.com/content/07e4dc9e-86c4-11e7-bf50-e1c239b45787> [<https://perma.cc/D9A4-JFEA>].

¹⁸³ Max Chafkin & Sarah Frier, *How Snapchat Built a Business by Confusing Olds*, Bloomberg (Mar. 3, 2016), <https://www.bloomberg.com/features/2016-how-snapchat-built-a-business/> [<https://perma.cc/DJT8-TK3L>].

¹⁸⁴ Kif Leswing, *Snapchat just introduced a feature it paid more than \$100 million for*, Bus. Insider (July 19, 2016), <https://www.businessinsider.com/snapchat-just-introduced-a-feature-it-paid-more-than-100-million-for-2016-7> [<https://perma.cc/4PRE-VSW9>].

¹⁸⁵ Larry Magid, *Snapchat Creates SnapKidz – A Sandbox for Kids Under 13*, Forbes (June 23, 2013), <https://www.forbes.com/sites/larrymagid/2013/06/23/snapchat-creates-snapkidz-a-sandbox-for-kids-under-13/?sh=7c682a555e5a> [<https://perma.cc/ZQA9-F2VC>].

¹⁸⁶ *Id.*

¹⁸⁷ *Id.*

¹⁸⁸ Isobel Asher Hamilton, *Snapchat admits its age verification safeguards are effectively useless*, Bus. Insider (Mar. 19, 2019), <https://www.businessinsider.com/snapchat-says-its-age-verification-safeguards-are-effectively-useless-2019-3> [<https://perma.cc/V938-6AEG>].

1 161. Snap’s efforts to attract young users have been successful. *See supra*
2 Section IV.A. Teenagers consistently name Snapchat as a favorite social media platform. The
3 latest figures show 13% of children ages 8–12 used Snapchat in 2021,¹⁸⁹ and almost 60% of
4 children ages 13–17 use Snapchat.¹⁹⁰

5 **c. Snap Intentionally Maximizes the Time Users Spend on its Platform**

6 162. Snap promotes excessive use of its platform through design features and
7 manipulative algorithms intended to maximize users’ screen time.

8 163. Snap has implemented inherently and intentionally exploitive features into
9 Snapchat, including “Snapstreaks,” various trophies and reward systems, quickly disappearing
10 (“ephemeral”) messages, and filters. Snap designed these features, along with others, to
11 maximize the amount of time users spend on Snapchat.

12 164. Snaps are intended to manipulate users by activating the rule of reciprocity.¹⁹¹
13 Whenever a user gets a snap, they feel obligated to send a snap back. And Snapchat tells users
14 each time they receive a snap by pushing a notification to the recipient’s cellphone. These
15 notifications are designed to prompt users to open Snapchat and view content, increasing the
16 amount of time users spend on Snapchat. Further, because snaps disappear within ten seconds of
17 being viewed, users feel compelled to reply immediately. This disappearing nature of snaps is a
18 defining characteristic of Snapchat and intended to keep users on the platform.

19 165. Snap also keeps users coming back to the Snapchat platform through the
20 “Snapstreaks” feature.¹⁹² A “streak” is a counter within Snapchat that tracks how many

21
22 ¹⁸⁹ Victoria Rideout *et al.*, *Common Sense Census: Media use by tweens and teens, 2021* at 5,
Common Sense Media (2022),
23 [https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-](https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf)
[report-final-web_0.pdf](https://www.commonsensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf) [<https://perma.cc/L6ND-X7VR>].

24 ¹⁹⁰ Emily Vogels *et al.*, *Teens, Social Media and Technology 2022*, Pew Rsch. Ctr. (Aug. 10,
25 2022), [https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-](https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/)
[2022/](https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/) [<https://perma.cc/BH7W-ZUPM>].

26 ¹⁹¹ Nir Eyal, *The Secret Psychology of Snapchat*, Nir & Far (Apr. 14, 2015),
<https://www.nirandfar.com/psychology-of-snapchat/> [<https://perma.cc/ZQC2-8W3M>].

27 ¹⁹² See Avery Hartmans, *These are the sneaky ways apps like Instagram, Facebook, Tinder lure*
you in and get you ‘addicted’, Bus. Insider (Feb. 17 2018),
28 <https://www.businessinsider.com/how-app-developers-keep-us-addicted-to-our-smartphones->

consecutive days two users have sent each other snaps. If a user fails to snap the other user within 24 hours, the streak ends. Snap adds extra urgency by putting an hourglass emoji next to a friend's name if a Snapchat streak is about to end.¹⁹³ This design implements a system where a user must "check constantly or risk missing out."¹⁹⁴ And this feature is particularly effective on teenage users. "For teens in particular, streaks are a vital part of using the app, and of their social lives as a whole."¹⁹⁵ Some children become so obsessed with maintaining a Snapstreak that they give their friends access to their accounts when they may be away from their phone for a day or more, such as on vacation.¹⁹⁶

166. Snap also designed features that operate on IVR principles to maximize the time users are on its platform. The "rewards" come in the form of a user's "Snapscore," and other signals of recognition similar to "likes" used in other platforms. For example, a Snapscore increases with each snap a user sends and receives. The increase in score and other trophies and charms users can earn by using the app operate on variable reward patterns. Like Snapstreaks, these features are designed to incentivize sending snaps and increase the amount of time users

[2018-1#snapchat-uses-snapstreaks-to-keep-you-hooked-13](https://www.cbc.ca/news/science/marketplace-phones-1.4384876) [<https://perma.cc/5RE8-3PMA>]; see generally Virginia Smart & Tyana Grundig, *'We're designing minds': Industry insider reveals secrets of addictive app trade*, CBC (Nov. 3, 2017), <https://www.cbc.ca/news/science/marketplace-phones-1.4384876> [<https://perma.cc/93PV-XE3E>]; Julian Morgans, *The Secret Ways Social Media is Built for Addiction*, Vice (May 17, 2017), <https://www.vice.com/en/article/vv5jkb/the-secret-ways-social-media-is-built-for-addiction> [<https://perma.cc/2HES-Y3AB>].

¹⁹³ Lizette Chapman, *Inside the Mind of a Snapchat Streaker*, Bloomberg (Jan. 30, 2017), <https://www.bloomberg.com/news/features/2017-01-30/inside-the-mind-of-a-snapchat-streaker> [<https://perma.cc/V92N-WSGP>].

¹⁹⁴ *Id.*

¹⁹⁵ Avery Hartmans, *These are the sneaky ways apps like Instagram, Facebook, Tinder lure you in and get you 'addicted'*, Bus. Insider (Feb. 17 2018), <https://www.businessinsider.com/how-app-developers-keep-us-addicted-to-our-smartphones-2018-1#snapchat-uses-snapstreaks-to-keep-you-hooked-13> [<https://perma.cc/5RE8-3PMA>]; see generally Cathy Becker, *Experts warn parents how Snapchat can hook in teens with streaks*, ABC News (July 27, 2017), <https://abcnews.go.com/Lifestyle/experts-warn-parents-snapchat-hook-teens-streaks/story?id=48778296> [<https://perma.cc/47HQ-7WVQ>].

¹⁹⁶ Caroline Knorr, *How to resist technology addiction*, CNN (Nov. 9, 2017), <https://www.cnn.com/2017/11/09/health/science-of-tech-obsession-partner/index.html> [<https://perma.cc/WWR9-6E2P>]; Jon Brooks, *7 Specific Tactics Social Media Companies Use to Keep You Hooked*, KQED (June 9, 2017), <https://www.kqed.org/futureofyou/397018/7-specific-ways-social-media-companies-have-you-hooked> [<https://perma.cc/RDR2-TKDR>].

1 spend on Snapchat.

2 167. Snap also designs photo and video filters and lenses, which are central to
3 Snapchat's function as a photo and video sharing social media platform. Snap designed its filters
4 and lenses in a way to further maximize the amount of time users spend on Snapchat. One way
5 Snap uses its filters to hook young users is by creating temporary filters that impose a sense of
6 urgency to use them before they disappear. Another way Snap designed its filters to increase
7 screen use is by gamification. Many filters include games,¹⁹⁷ creating competition between users
8 by sending each other snaps with scores. Further, Snap tracks data on the most commonly used
9 filters and develops new filters based on this information.¹⁹⁸ Snap personalizes, designs and
10 modifies these filters to maximize the amount of time users spend on Snapchat.¹⁹⁹

11 **d. Snapchat's Algorithms Are Manipulative and Harmful**

12 168. Snap also uses complex algorithms to suggest friends and recommend content to
13 users in order to keep them using Snapchat.

14 169. Snap utilizes an equation to determine whether someone should add someone else
15 as a friend on Snapchat and notifies the user of these recommendations. This is known as "Quick
16 Add." By using an algorithm to suggest friends to users, Snapchat increases the odds that users
17 will add additional friends, send additional snaps, and spend more time on the app.

18 170. Snapchat also contains "Discover" and "Spotlight" features that use algorithms to
19 recommend content to users. The Discover feature includes content from news and other media
20 outlets.²⁰⁰ A user's Discover page is populated by an algorithm and constantly changes
21 depending on how a user interacts with the content.²⁰¹ Similarly, the Spotlight feature promotes
22 popular videos from other Snapchat users and is based on an algorithm that determines whether a

23 ¹⁹⁷ Josh Constine, *Now Snapchat Has 'Filter Games'*, TechCrunch (Dec. 23, 2016),
24 <https://techcrunch.com/2016/12/23/snapchat-games/> [<https://perma.cc/U9UY-C5NR>].

25 ¹⁹⁸ *How We Use Your Information*, Snap Inc., <https://snap.com/en-US/privacy/your-information>
26 [<https://perma.cc/93WL-GSY8>] (last visited June 26, 2023).

27 ¹⁹⁹ *Id.*

28 ²⁰⁰ Steven Tweedie, *How to Use Snapchat's New 'Discover' Feature*, Bus. Insider (Jan. 27,
2015), <https://www.businessinsider.com/how-to-use-snapchat-discover-feature-2015-1>
[<https://perma.cc/22ST-8HAL>].

²⁰¹ *How We Use Your Information*, Snap Inc., <https://snap.com/en-US/privacy/your-information>
[<https://perma.cc/93WL-GSY8>] (last visited June 26, 2023).

1 user has positively or negatively engaged with similar content.²⁰² Snap programs its algorithms
2 to push content to users that will keep them engaged for increased amounts of time on Snapchat
3 and, thereby, worsen their mental health.

4 **e. Snap’s Conduct in Designing and Operating Its Platform Has Harmed**
5 **Youth Mental Health**

6 171. The way in which Snap has designed and operated Snapchat has caused youth to
7 suffer increased anxiety, depression, disordered eating, and sleep deprivation.

8 172. Snap knows Snapchat is harming youth because, as alleged above, Snap
9 intentionally designed Snapchat to maximize engagement by preying on the psychology of
10 children through its use of algorithms and other features including Snapstreaks, various trophies
11 and reward systems, quickly disappearing messages, filters, and games.

12 173. Snap should know that its conduct has negatively affected youth. Snap’s conduct
13 has been the subject of inquiries by the United States Senate regarding Snapchat’s use “to
14 promote bullying, worsen eating disorders, and help teenagers buy dangerous drugs or engage in
15 reckless behavior.”²⁰³ Further, Senators across the ideological spectrum have introduced bills
16 that would ban many of the features Snapchat offers, including badges and other awards
17 recognizing a user’s level of engagement with the platform.²⁰⁴ Despite these calls for oversight
18 from Congress, Snap has failed to curtail its use of streaks, badges, and other features that award
19 users’ levels of engagement with Snapchat.

20 174. Snap also knows or should know of Snapchat’s other negative effects on youth

21 ²⁰² Sara Fischer, *Snapchat launches Spotlight, a TikTok competitor*, Axios (Nov. 23, 2020),
22 <https://www.axios.com/2020/11/23/snapchat-launches-spotlight-tiktok-competitor>
23 [<https://perma.cc/3FYB-C2DU>]; *How We Use Your Information*, Snap Inc.,
<https://snap.com/en-US/privacy/your-information> [<https://perma.cc/93WL-GSY8>] (last visited
June 26, 2023).

24 ²⁰³ Bobby Allyn, *4 Takeaways from the Senate child safety hearing with YouTube, Snapchat and*
25 *TikTok*, Nat’l Pub. Radio (Oct. 26, 2021),
26 [https://www.npr.org/2021/10/26/1049267501/snapchat-tiktok-youtube-congress-child-safety-](https://www.npr.org/2021/10/26/1049267501/snapchat-tiktok-youtube-congress-child-safety-hearing)
[hearing](https://www.npr.org/2021/10/26/1049267501/snapchat-tiktok-youtube-congress-child-safety-hearing) [<https://perma.cc/8GNJ-PL9>].

27 ²⁰⁴ See Abigail Clukey, *Lawmaker Aims To Curb Social Media Addiction With New Bill*, Nat’l
28 Pub. Radio (Aug. 3, 2019), [https://www.npr.org/2019/08/03/747086462/lawmaker-aims-to-](https://www.npr.org/2019/08/03/747086462/lawmaker-aims-to-curb-social-media-addiction-with-new-bill)
[curb-social-media-addiction-with-new-bill](https://www.npr.org/2019/08/03/747086462/lawmaker-aims-to-curb-social-media-addiction-with-new-bill) [<https://perma.cc/VP9G-EVBK>]; *Social Media*
Addiction Reduction Technology Act, S. 2314, 116th Cong. (2019); *Kids Internet Design and*
Safety Act, S. 2918, 117th Cong. (2021).

1 based on published research findings. For instance, researchers coined the phrase “Snapchat
2 dysmorphia” after the pernicious effect Snapchat has had on how young people view
3 themselves.²⁰⁵ The researchers and doctors use this phrase to describe people, usually young
4 women, who are seeking plastic surgery to make themselves look like the way they do through
5 Snapchat filters.²⁰⁶ The cause of this trend appears to be Snapchat’s and other social media
6 platforms’ beauty filters, which create a “sense of unattainable perfection” that is alienating and
7 damaging to a person’s self-esteem.²⁰⁷ One social psychologist summed the effect as “the
8 pressure to present a certain filtered image on social media can certainly play into [depression
9 and anxiety] for younger people who are just developing their identities.”²⁰⁸

10 175. Despite knowing Snapchat harms its young users, Snap continues to update and
11 add features intentionally designed to maximize the amount of time users spend on Snapchat.
12 Snap continues its harmful conduct because its advertising revenue relies on Snapchat’s users
13 consuming large volumes of content on its platform.

14 3. TikTok Intentionally Marketed to and Designed Its Social Media Platform for 15 Youth Users, Substantially Contributing to the Mental Health Crisis

16 a. TikTok’s Platform

17 176. TikTok is a social media platform that describes itself as “the leading destination
18 for short-form mobile video.”²⁰⁹ According to TikTok, it is primarily a platform where users
19 “create and watch short-form videos.”²¹⁰

20 177. TikTok’s predecessor, Musical.ly, launched in 2014 as a place where people

21 ²⁰⁵ ‘Snapchat Dysmorphia’: When People Get Plastic Surgery To Look Like A Social Media
22 Filter, WBUR (Aug 29, 2018), [https://www.wbur.org/hereandnow/2018/08/29/snapchat-](https://www.wbur.org/hereandnow/2018/08/29/snapchat-dysmorphia-plastic-surgery)
23 [dysmorphia-plastic-surgery](https://www.wbur.org/hereandnow/2018/08/29/snapchat-dysmorphia-plastic-surgery) [<https://perma.cc/JDZ7-TUX7>].

²⁰⁶ *Id.*

24 ²⁰⁷ Nathan Smith & Allie Yang, *What happens when lines blur between real and virtual beauty*
25 *through filters*, ABC News (May 1, 2021), [https://abcnews.go.com/Technology/lines-blur-real-](https://abcnews.go.com/Technology/lines-blur-real-virtual-beauty-filters/story?id=77427989)
26 [virtual-beauty-filters/story?id=77427989](https://abcnews.go.com/Technology/lines-blur-real-virtual-beauty-filters/story?id=77427989) [<https://perma.cc/KA79-G2PX>].

²⁰⁸ *Id.*

27 ²⁰⁹ *About: Our Mission*, TikTok, <https://www.tiktok.com/about> [<https://perma.cc/3XS6-U99U>]
(last visited June 26, 2023).

28 ²¹⁰ *Protecting Kids Online: Snapchat, TikTok, and YouTube: Hearing Before the Subcomm. On*
Consumer Protection, Product Safety, and Data Security, 117 Cong. (2021) (statement of
Michael Beckerman, VP and Head of Public Policy, Americas, TikTok).

could create and share 15-second videos of themselves lip-syncing or dancing to their favorite music.²¹¹

178. In 2017, ByteDance launched an international version of a similar platform that also enabled users to create and share short lip-syncing videos that it called TikTok.²¹²

179. That same year, ByteDance acquired Musical.ly to leverage its young user base in the United States, of almost 60 million monthly active users.²¹³

180. Months later, the apps were merged under the TikTok brand.²¹⁴

181. Since then, TikTok has expanded the length of time for videos from 15-seconds to up to 10 minutes;²¹⁵ created a fund that was expected to grow to over \$1 billion within three years to incentivize users to create videos that even more people will watch;²¹⁶ and had users debut their own songs, share comedy skits,²¹⁷ and “challenge” others to perform an activity.²¹⁸

182. The videos users create on TikTok are only one part of the equation.

²¹¹ Biz Carson, *How a failed education startup turned into Musical.ly, the most popular app you’ve probably never heard of*, Bus. Insider (May 28, 2016), <https://www.businessinsider.com/what-is-musically-2016-5> [<https://perma.cc/78KJ-WBRS>].

²¹² Paresh Dave, *China’s ByteDance scrubs Musical.ly brand in favor of TikTok*, Reuters (Aug. 1, 2018), <https://www.reuters.com/article/us-bytedance-musically/chinas-bytedance-scrubs-musical-ly-brand-in-favor-of-tiktok-idUSKBN1KN0BW> [<https://perma.cc/EZ6K-3Q8B>].

²¹³ Liza Lin & Rolfe Winkler, *Social-Media App Musical.ly Is Acquired for as Much as \$1 Billion; With 60 million monthly users, startup sells to Chinese maker of news app Toutiao*, Wall St. J. (Nov. 10, 2017), <https://www.wsj.com/articles/lip-syncing-app-musical-ly-is-acquired-for-as-much-as-1-billion-1510278123> [<https://perma.cc/KXV7-C5HW>].

²¹⁴ Paresh Dave, *China’s ByteDance scrubs Musical.ly brand in favor of TikTok*, Reuters (Aug. 1, 2018), <https://www.reuters.com/article/us-bytedance-musically/chinas-bytedance-scrubs-musical-ly-brand-in-favor-of-tiktok-idUSKBN1KN0BW> [<https://perma.cc/EZ6K-3Q8B>].

²¹⁵ Andrew Hutchinson, *TikTok Confirms that 10 Minute Video Uploads are Coming to All Users*, SocialMediaToday (Feb. 28, 2022), <https://www.socialmediatoday.com/news/tiktok-confirms-that-10-minute-video-uploads-are-coming-to-all-users/619535/> [<https://perma.cc/DY6R-A9QY>].

²¹⁶ Vanessa Pappas, *Introducing the \$200M TikTok Creator Fund*, TikTok (July 29, 2021), <https://newsroom.tiktok.com/en-us/introducing-the-200-million-tiktok-creator-fund> [<https://perma.cc/5HJ4-475H>].

²¹⁷ Joseph Steinberg, *Meet Musical.ly, the Video Social Network Quickly Capturing the Tween and Teen Markets*, Inc. (June 2, 2016), <https://www.inc.com/joseph-steinberg/meet-musically-the-video-social-network-quickly-capturing-the-tween-and-teen-m.html> [<https://perma.cc/452K-SEAS>].

²¹⁸ John Herrman, *How TikTok is Rewriting the World*, N.Y. Times (Mar. 10, 2019), <https://www.nytimes.com/2019/03/10/style/what-is-tik-tok.html> [<https://perma.cc/82VQ-8VPF>].

1 183. “[O]ne of the defining features of the TikTok platform,” is its “For You” feed.²¹⁹
2 There, users are served with an unending stream of videos TikTok curates for them based on
3 complex, machine-learning algorithms intended to keep users on its platform. TikTok itself
4 describes the feed as “central to the TikTok experience and where most of our users spend their
5 time.”²²⁰ The *New York Times* described it this way:

6 It’s an algorithmic feed based on videos you’ve interacted with, or even just
7 watched. It never runs out of material. It is not, unless you train it to be, full of
8 people you know, or things you’ve explicitly told it you want to see. It’s full of
9 things that you seem to have demonstrated you want to watch, no matter what you
10 actually say you want to watch.²²¹

11 184. The “For You” feed has quickly garnered TikTok hundreds of millions of users.
12 Since 2018, TikTok has grown from 271 million global users to more than 1 billion global
13 monthly users as of September 2021.²²²

14 **b. TikTok Markets Its Platform to Youth**

15 185. TikTok, like the other Defendants’ platforms, has built its business plan around
16 advertising revenue, which has boomed. In 2022, TikTok is projected to receive \$11 billion in
17 advertising revenue, over half of which (*i.e.*, \$6 billion) is expected to come from the United
18 States.²²³

19 186. TikTok, since its inception as Musical.ly, has been designed and developed with
20 youth in mind.

21 187. Alex Zhu and Louis Yang, the other co-founder of Musical.ly, raised \$250,000 to

22 ²¹⁹ *How TikTok recommends videos #ForYou*, TikTok (June 18, 2020),
23 <https://newsroom.tiktok.com/en-us/how-tiktok-recommends-videos-for-you>
24 [<https://perma.cc/4DBQ-MCQY>].

25 ²²⁰ *Id.*

26 ²²¹ John Herrman, *How TikTok is Rewriting the World*, N.Y. Times (Mar. 10, 2019),
27 <https://www.nytimes.com/2019/03/10/style/what-is-tik-tok.html> [<https://perma.cc/82VQ-8VPF>].

28 ²²² Jessica Bursztynsky, *TikTok says 1 billion people use the app each month*, CNBC (Sept. 27, 2021),
<https://www.cnbc.com/2021/09/27/tiktok-reaches-1-billion-monthly-users.html>
[<https://perma.cc/S6WT-2ET7>].

²²³ Bhanvi Staija, *TikTok’s ad revenue to surpass Twitter and Snapchat combined in 2022*,
Reuters (Apr. 11, 2022), [https://www.reuters.com/technology/tiktoks-ad-revenue-surpass-](https://www.reuters.com/technology/tiktoks-ad-revenue-surpass-twitter-snapchat-combined-2022-report-2022-04-11/)
[twitter-snapchat-combined-2022-report-2022-04-11/](https://www.reuters.com/technology/tiktoks-ad-revenue-surpass-twitter-snapchat-combined-2022-report-2022-04-11/) [<https://perma.cc/L8U2-Q9ZZ>].

1 build an app that experts could use to create short three- to five-minute videos explaining a
2 subject.²²⁴ The day they released the app, Zhu said they knew “[i]t was doomed to be a failure,”
3 because “[i]t wasn’t entertaining, and it didn’t attract teens.”²²⁵

4 188. According to Zhu, he stumbled upon the idea that would become known as
5 TikTok while observing teens on a train, half of whom were listening to music while the other
6 half took selfies or videos and shared the results with friends.²²⁶ “That’s when Zhu realized he
7 could combine music, videos, and a social network to attract the early-teen demographic.”²²⁷

8 189. Zhu and Yang thereafter developed the short-form video app that is now known
9 as TikTok, which commentators have observed “encourages a youthful audience in subtle and
10 obvious ways.”²²⁸

11 190. Among the more subtle ways the app was marketed to youth, are its design and
12 content. For example, the Federal Trade Commission (“FTC”) alleged that the app initially
13 centered around a child-oriented activity (i.e., lip syncing); featured music by celebrities that
14 then appealed primarily to teens and tweens, such as Selena Gomez and Ariana Grande; labelled
15 folders with names meant to appeal to youth, such as “Disney” and “school”; included songs in
16 such folders related to Disney television shows and movies, such as “Can You Feel the Love
17 Tonight” from the movie “The Lion King” and “You’ve Got a Friend in Me” from the movie
18 “Toy Story” and songs covering school-related subjects or school-themed television shows and
19 movies.²²⁹

20 191. The target demographic was also reflected in the sign-up process. In 2016, the
21

22 ²²⁴ Biz Carson, *How a failed education startup turned into Musical.ly, the most popular app*
23 *you’ve probably never heard of*, Bus. Insider (May 28, 2016),
24 <https://www.businessinsider.com/what-is-musically-2016-5> [<https://perma.cc/78KJ-WBRS>].

25 ²²⁵ *Id.*

26 ²²⁶ *Id.*

27 ²²⁷ *Id.*

28 ²²⁸ John Herrman, *Who’s Too Young for an App? Musical.ly Tests the Limits*, N.Y. Times (Sept.
16, 2016), [https://www.nytimes.com/2016/09/17/business/media/a-social-network-frequented-](https://www.nytimes.com/2016/09/17/business/media/a-social-network-frequented-by-children-tests-the-limits-of-online-regulation.html)
[by-children-tests-the-limits-of-online-regulation.html](https://www.nytimes.com/2016/09/17/business/media/a-social-network-frequented-by-children-tests-the-limits-of-online-regulation.html) [<https://perma.cc/9HTF-BHT7>].

²²⁹ Complaint for Civil Penalties, Permanent Injunction, and Other Equitable Relief (“**Musical.ly**
Complaint”) at p. 8, ¶¶ 26–27, *United States v. Musical.ly*, 2:19-cv-01439-ODW-RAO (C.D.
Cal. Feb. 27, 2019), ECF No. 1.

1 birthdate for those signing up for the app defaulted to the year 2000 (i.e., 16 years old).²³⁰

2 192. TikTok also cultivated a younger demographic in unmistakable, albeit concealed,
3 ways. In 2020, the *Intercept* reported on a document TikTok prepared for its moderators. In the
4 document, TikTok instructs its moderators that videos of “senior people with too many wrinkles”
5 are disqualified for the “For You” feed because that would make “the video . . . much less
6 attractive [and] not worth[] . . . recommend[ing].”²³¹

7 193. In December 2016, Zhu confirmed the company had actual knowledge that “a lot
8 of the top users are under 13.”²³²

9 194. The FTC alleged that despite the company’s knowledge of these and a
10 “significant percentage” of other users who were under 13, the company failed to comply with
11 the COPPA.²³³

12 195. TikTok settled those claims in 2019 by agreeing to pay what was then the largest
13 ever civil penalty under COPPA and to several forms of injunctive relief.²³⁴

14 196. In an attempt to come into compliance with the consent decree and COPPA,
15 TikTok made available to users under 13 what it describes as a “limited, separate app
16 experience.”²³⁵ The child version of TikTok restricts users from posting videos through the app.
17 Children can still, however, record and watch videos on TikTok.²³⁶ For that reason, experts fear
18

19 ²³⁰Melia Robinson, *How to use Musical.ly, the app with 150 million users that teens are obsessed*
20 *with*, Bus. Insider (Dec. 7, 2016), [https://www.businessinsider.com/how-to-use-musically-app-](https://www.businessinsider.com/how-to-use-musically-app-2016-12)
21 [2016-12](https://www.businessinsider.com/how-to-use-musically-app-2016-12) [<https://perma.cc/2Q9R-F8TN>].

22 ²³¹ Sam Biddle et al., *Invisible Censorship: TikTok Told Moderators to Suppress Posts by*
23 *“Ugly” People and the Poor to Attract New Users*, *Intercept* (Mar. 15, 2020),
24 <https://theintercept.com/2020/03/16/tiktok-app-moderators-users-discrimination/>
25 [<https://perma.cc/6YKN-G54N>].

26 ²³² Jon Russell, *Musical.ly defends its handling of young users, as it races past 40M MAUs at*
27 *8:58–11:12*, TechCrunch (Dec. 6, 2016), [https://techcrunch.com/2016/12/06/musically-](https://techcrunch.com/2016/12/06/musically-techcrunch-disrupt-london/)
28 [techcrunch-disrupt-london/](https://techcrunch.com/2016/12/06/musically-techcrunch-disrupt-london/) [<https://perma.cc/CCX9-WQDF>].

²³³ See generally *Musical.ly Complaint*, supra note 227.

²³⁴ Lesley Fair, *Largest FTC COPPA settlement requires Musical.ly to change its tune*, FTC
(Feb. 27, 2019), [https://www.ftc.gov/business-guidance/blog/2019/02/largest-ftc-coppa-](https://www.ftc.gov/business-guidance/blog/2019/02/largest-ftc-coppa-settlement-requires-musically-change-its-tune)
[settlement-requires-musically-change-its-tune](https://www.ftc.gov/business-guidance/blog/2019/02/largest-ftc-coppa-settlement-requires-musically-change-its-tune) [<https://perma.cc/S747-9RDD>].

²³⁵ Dami Lee, *TikTok stops young users from uploading videos after FTC settlement*, *Verge* (Feb.
27, 2019), [https://www.theverge.com/2019/2/27/18243510/tiktok-age-young-user-videos-ftc-](https://www.theverge.com/2019/2/27/18243510/tiktok-age-young-user-videos-ftc-settlement-13-childrens-privacy-law)
[settlement-13-childrens-privacy-law](https://www.theverge.com/2019/2/27/18243510/tiktok-age-young-user-videos-ftc-settlement-13-childrens-privacy-law) [<https://perma.cc/W2BQ-T5Y7>].

²³⁶ *Id.*

the app is “designed to fuel [kids’] interest in the grown-up version.”²³⁷

197. These subtle and obvious ways TikTok markets to and obtained a young userbase are manifestations of Zhu’s views about the importance of user engagement to growing TikTok. Zhu explained the target demographic to the *New York Times*: “[T]eenage culture doesn’t exist” in China because “teens are super busy in school studying for tests, so they don’t have the time and luxury to play social media apps.”²³⁸ By contrast, Zhu describes “[t]eenagers in the U.S. [as] a golden audience.”²³⁹

198. TikTok’s efforts to attract young users have been successful. *See supra* Section IV.A. Over 66% of children ages 13–17 report having used the TikTok app.

c. TikTok Intentionally Maximizes the Time Users Spend on its Platform

199. TikTok employs design elements and complex algorithms to simulate variable reward patterns in a flow-inducing stream of short-form videos intended to captivate its user’s attention well after they are satiated.

200. Like the other Defendants’ social media platforms, TikTok developed features that exploit psychological phenomenon such as IVR and reciprocity to maximize the time users spend on its platform.

201. TikTok drives habitual use of its platform using design elements that operate on principles of IVR. For example, TikTok designed its platform to allow users to like and reshare videos. Those features serve as rewards for users who create content on the platform. Receiving a like or reshare indicates that others approve of that user’s content and satisfies their natural desire for acceptance.²⁴⁰ Studies have shown that “likes” activate the reward region of the

²³⁷ Leonard Sax, *Is TikTok Dangerous for Teens?*, Inst. Fam. Stud. (Mar. 29, 2022), <https://ifstudies.org/blog/is-tiktok-dangerous-for-teens-> [<https://perma.cc/RGX9-3JWC>].

²³⁸ Paul Mozur, *Chinese Tech Firms Forced to Choose Market: Home or Everywhere Else*, N.Y. Times (Aug. 9, 2016), <https://www.nytimes.com/2016/08/10/technology/china-homegrown-internet-companies-rest-of-the-world.html> [<https://perma.cc/2Q2L-DYWZ>].

²³⁹ *Id.*

²⁴⁰ *See, e.g.,* Lauren E. Sherman et al., *The Power of the Like in Adolescence: Effects of Peer Influence on Neural and Behavioral Responses to Social Media*, 27(7) Psych. Sci. 1027–35 (July 2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5387999/> [<https://perma.cc/9T58-KJBG>].

1 brain.²⁴¹ The release of dopamine in response to likes creates a positive feedback loop.²⁴² Users
2 will use TikTok—again and again—in hope of another pleasurable experience.²⁴³

3 202. TikTok also uses reciprocity to manipulate users to use the platform. TikTok
4 invokes reciprocity through features like “Duet.” The Duet feature allows users to post a video
5 side-by-side with a video from another TikTok user. Users use Duet as a way to react to the
6 videos of TikTok content creators. The response is intended to engender a reciprocal response
7 from the creator of the original video.

8 203. TikTok, like Snapchat, offers video filters, lenses, and music, which are intended
9 to keep users on its platform. Also, like Snapchat, TikTok has gamified its platform through
10 “challenges.” These challenges are essentially campaigns in which users compete to perform a
11 specific task. By fostering competition, TikTok incentivizes users to use its platform.

12 204. TikTok’s defining features, its “For You” feed, is a curated, never-ending stream
13 of short-form videos intended to keep users on its platform. In that way, TikTok feeds users
14 beyond the point they are satiated. The ability to scroll ad infinitum, coupled with the variable
15 reward pattern of TikTok induces a flow-like state for users that distorts their sense of time.²⁴⁴
16 That flow is yet another way TikTok increases the time users spend on its platform.

17 **d. TikTok’s Algorithms are Manipulative**

18 205. The first thing a user sees when they open TikTok is the “For You” feed, even if
19 they have never posted anything, followed anyone, or liked a video.²⁴⁵

20 206. The “For You” page presents users with a “stream of videos” TikTok claims are

21 ²⁴¹ *Id.*

22 ²⁴² Rasan Burhan & Jalal Moradzadeh, *Neurotransmitter Dopamine (DA) and its Role in the*
23 *Development of Social Media Addiction*, 11(7) J. Neurology & Neurophysiology 507 (2020),
24 [https://www.iomcworld.org/open-access/neurotransmitter-dopamine-da-and-its-role-in-the-](https://www.iomcworld.org/open-access/neurotransmitter-dopamine-da-and-its-role-in-the-development-of-social-media-addiction.pdf)
[development-of-social-media-addiction.pdf](https://www.iomcworld.org/open-access/neurotransmitter-dopamine-da-and-its-role-in-the-development-of-social-media-addiction.pdf) [<https://perma.cc/3QWP-9N5A>].

25 ²⁴³ *Id.*

26 ²⁴⁴ Christian Montag *et al.*, *Addictive Features of Social Media/Messenger Platforms and*
Freemium Games against the Background of Psychological and Economic Theories, 16(14)
27 Int’l J. Env’t Rsch. & Pub. Health 2612 (July 23, 2019),
<https://doi.org/10.3390/ijerph16142612> [<https://perma.cc/JUG3-P7VH>].

28 ²⁴⁵ Brian Feldman, *TikTok is Not the Internet’s Eden*, N.Y. Mag. (Mar. 16, 2020),
[https://nymag.com/intelligencer/2020/03/tiktok-didnt-want-you-to-see-ugly-or-poor-people-on-](https://nymag.com/intelligencer/2020/03/tiktok-didnt-want-you-to-see-ugly-or-poor-people-on-its-app.html)
[its-app.html](https://nymag.com/intelligencer/2020/03/tiktok-didnt-want-you-to-see-ugly-or-poor-people-on-its-app.html) [<https://perma.cc/A5TR-U794>].

“curated to [each user’s] interests.”²⁴⁶

207. According to TikTok, it populates each user’s “For You” feed by “ranking videos based on a combination of factors,” that include, among others, any interests expressed when a user registers a new account, videos a user likes, accounts they follow, hashtags, captions, sounds in a video they watch, and certain device settings, such as their language preferences and where they are located.²⁴⁷

208. Critically, some factors weigh heavier than others. To illustrate, TikTok explains that an indicator of interest, such as “whether a user finishes watching a longer video from beginning to end, would receive greater weight than a weak indicator, such as whether the video’s viewer and creator are both in the same country.”²⁴⁸

209. TikTok claims it ranks videos in this way because the length of time a user spends watching a video is a “strong indicator of interest[.]”²⁴⁹

210. But Zhu offered a different explanation, he repeatedly told interviewers that he was “focused primarily on increasing the engagement of existing users.”²⁵⁰ “Even if you have tens of millions of users,” Zhu explained, “you have to keep them *always* engaged.”²⁵¹

211. The decisions TikTok made in programming its algorithms are intended to do just that, as TikTok candidly explained in an internal document titled, “TikTok Algo 101.” The document, which TikTok has confirmed is authentic, “explains frankly that in the pursuit of the company’s ‘ultimate goal’ of adding daily active users, it has chosen to optimize for two closely

²⁴⁶ *How TikTok recommends videos #ForYou*, TikTok (June 18, 2020), <https://newsroom.tiktok.com/en-us/how-tiktok-recommends-videos-for-you> [<https://perma.cc/4DBQ-MCQY>].

²⁴⁷ *Id.*

²⁴⁸ *Id.*

²⁴⁹ *Id.*

²⁵⁰ Joseph Steinberg, *Meet Musical.ly, the Video Social Network Quickly Capturing the Tween and Teen Markets*, Inc. (June 2, 2016), <https://www.inc.com/joseph-steinberg/meet-musically-the-video-social-network-quickly-capturing-the-tween-and-teen-m.html> [<https://perma.cc/2VJM-NSSX>].

²⁵¹ Biz Carson, *How a failed education startup turned into Musical.ly, the most popular app you’ve probably never heard of*, Bus. Insider (May 28, 2016), <https://www.businessinsider.com/what-is-musically-2016-5> [<https://perma.cc/78KJ-WBRS>] (emphasis added).

1 related metrics in the stream of videos it serves: ‘retention’ — that is, whether a user comes back
2 — and ‘time spent.’”²⁵²

3 212. “This system means that watch time is key.”²⁵³ Guillaume Chaslot, the founder of
4 Algo Transparency, who reviewed the document at the request of the *New York Times*, explained
5 that “rather than giving [people] what they really want,” TikTok’s “algorithm tries to get people
6 addicted[.]”²⁵⁴

7 213. Put another way, the algorithm, coupled with the design elements, condition users
8 through reward-based learning processes to facilitate the formation of habit loops that encourage
9 excessive use.

10 214. The end result is that TikTok uses “a machine-learning system that analyzes each
11 video and tracks user behavior so that it can serve up a continually refined, never-ending stream
12 of TikToks optimized to hold [user’s] attention.”²⁵⁵

13 **e. TikTok’s Conduct in Designing and Operating its Platform Has Harmed**
14 **Youth Mental Health**

15 215. TikTok’s decision to program its algorithm to prioritize user engagement causes
16 harmful and exploitive content to be amplified to the young market it has cultivated.

17 216. The Integrity Institute, a nonprofit consisting of engineers, product managers, data
18 scientists, and others, has demonstrated how prioritizing user engagement amplifies
19 misinformation on TikTok (and other platforms).²⁵⁶ That pattern, the Integrity Institute notes, is
20 “true for a broad range of harms,” such as hate speech and self-harm content, in addition to

21 ²⁵² Ben Smith, *How TikTok Reads Your Mind*, N.Y. Times (Dec. 5, 2021),
22 <https://www.nytimes.com/2021/12/05/business/media/tiktok-algorithm.html>
23 [<https://perma.cc/KTT2-UWTH>].

24 ²⁵³ *Id.*

25 ²⁵⁴ *Id.*

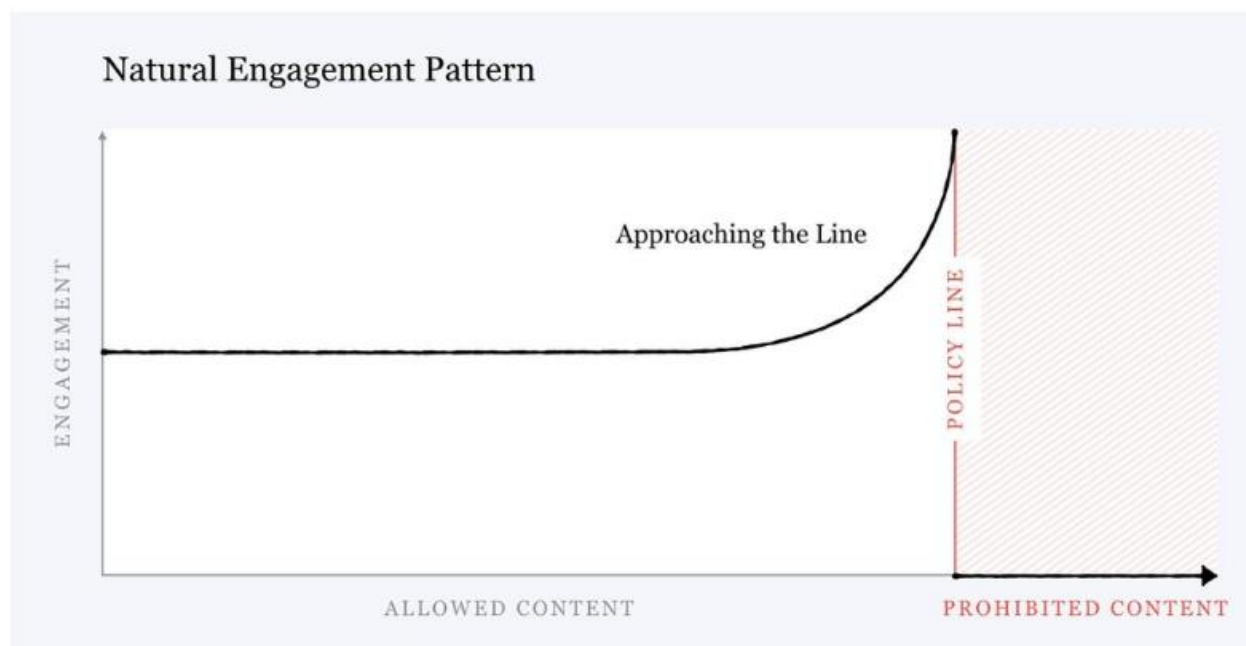
26 ²⁵⁵ Jia Tolentino, *How TikTok Holds Our Attention*, New Yorker (Sept. 30, 2019),
27 <https://www.newyorker.com/magazine/2019/09/30/how-tiktok-holds-our-attention>
28 [<https://perma.cc/YX85-ZFV6>].

²⁵⁶ *Misinformation Amplification Analysis and Tracking Dashboard*, Integrity Inst. (Oct. 13,
2022), [https://integrityinstitute.org/our-ideas/hear-from-our-fellows/misinformation-](https://integrityinstitute.org/our-ideas/hear-from-our-fellows/misinformation-amplification-tracking-dashboard)
[amplification-tracking-dashboard](https://integrityinstitute.org/our-ideas/hear-from-our-fellows/misinformation-amplification-tracking-dashboard) [<https://perma.cc/59QV-BYVK>]; see also Steven Lee Myers,
How Social Media Amplifies Misinformation More Than Information, N.Y. Times (Oct. 13,
2022), [https://www.nytimes.com/2022/10/13/technology/misinformation-integrity-institute-](https://www.nytimes.com/2022/10/13/technology/misinformation-integrity-institute-report.html)
[report.html](https://www.nytimes.com/2022/10/13/technology/misinformation-integrity-institute-report.html) [<https://perma.cc/EA9U-UBZF>].

misinformation.²⁵⁷

217. The Integrity Institute’s analysis builds on a premise Mark Zuckerberg described as the “Natural Engagement Pattern.”²⁵⁸

218. This chart shows that as content gets closer and closer to becoming harmful, on average, it gets more engagement.



219. According to Zuckerberg “no matter where we draw the lines for what is allowed, as a piece of content gets close to that line, people will engage with it more on average[.]”²⁵⁹

220. This has important implications for platform design, as the Integrity Institute explains:

when platforms use machine learning models to predict user engagement on content, we should expect the predicted engagement to follow the actual engagement. When those predictions are used to rank and recommend content, specifically when a higher predicted engagement score means the content is more

²⁵⁷ *Misinformation Amplification Analysis and Tracking Dashboard*, Integrity Inst. (Oct. 13, 2022), <https://integrityinstitute.org/our-ideas/hear-from-our-fellows/misinformation-amplification-tracking-dashboard> [<https://perma.cc/59QV-BYVK>].

²⁵⁸ Mark Zuckerberg, *A Blueprint for Content Governance and Enforcement*, Facebook (Nov. 15, 2018), https://www.facebook.com/notes/mark-zuckerberg/a-blueprint-for-content-governance-and-enforcement/10156443129621634/?hc_location=ufi [<https://perma.cc/ZK5C-ZTSX>].

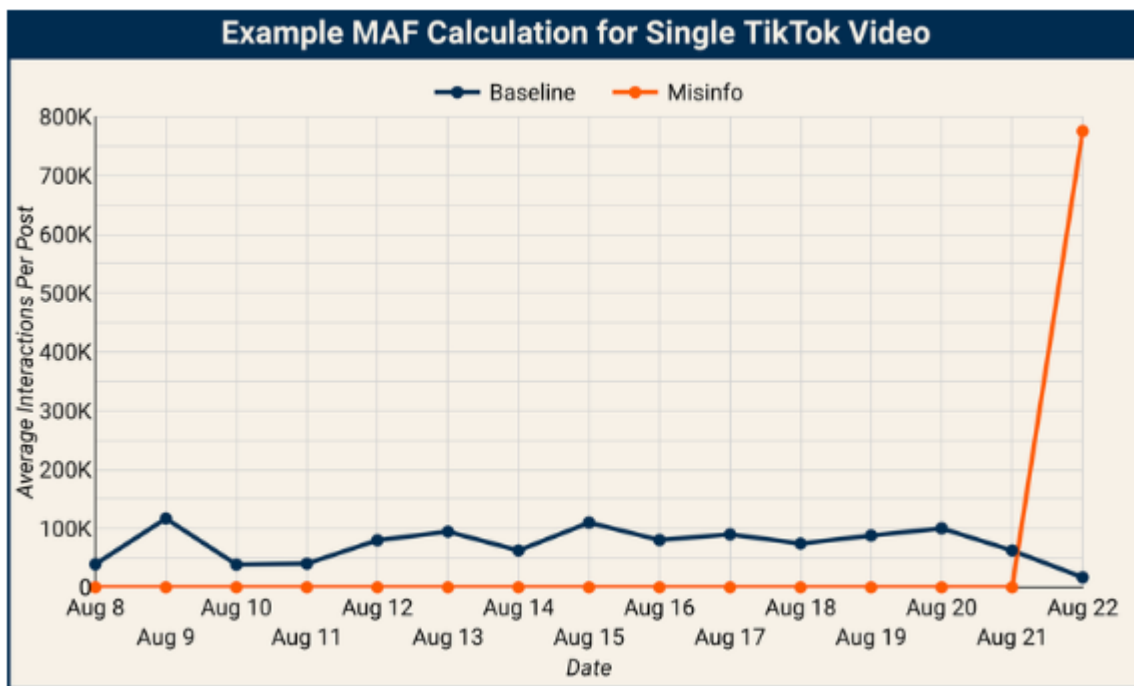
²⁵⁹ *Id.*

likely to be recommended or placed at the top of feeds, then we expect that misinformation will be preferentially distributed and amplified on the platform.²⁶⁰

221. Put differently, if you use past engagement to predict future engagement, as TikTok does, you are most likely to populate users “For You” feed with harmful content.

222. The Integrity Institute tested its theory by analyzing a category of harmful content: misinformation. Specifically, the Integrity Institute compared the amount of engagement (e.g., number of views) a post containing misinformation received as compared to prior posts from the same content creator.²⁶¹

223. For example, a TikTok user’s historical posts received on average 75,000 views. When that same user posted a false statement (as determined by the International Fact Checking Network), the post received 775,000 views. In this case, TikTok amplified the misinformation 10 times more than this user’s typical content.²⁶²



224. After analyzing many other posts from other users, the Integrity Institute found

²⁶⁰ *Misinformation Amplification Analysis and Tracking Dashboard*, Integrity Inst. (Oct. 13, 2022), <https://integrityinstitute.org/our-ideas/hear-from-our-fellows/misinformation-amplification-tracking-dashboard> [<https://perma.cc/59QV-BYVK>].

²⁶¹ *Id.*

²⁶² *Id.*

1 that TikTok on average amplified misinformation 29 times more than other content.²⁶³

2 225. A separate investigation by *NewsGuard* found TikTok’s search algorithm
3 similarly amplified misinformation. TikTok’s search engine, like its “For You” feed, is a favorite
4 among youth, with 40% preferring it (and Instagram) over Google.²⁶⁴ Unfortunately, *NewsGuard*
5 found that one in five of the top 20 TikTok search results on prominent news topics, such as
6 school shootings and COVID vaccines, contain misinformation.²⁶⁵

7 226. Misinformation is just one type of harmful content TikTok amplifies to its young
8 users. Investigations by the *Wall Street Journal* found TikTok inundated young users with videos
9 about depression, self-harm, drugs, and extreme diets, to name a few.

10 227. In one investigation, the *Wall Street Journal* found TikTok’s algorithm quickly
11 pushed users down rabbit holes where they were more likely to encounter harmful content. The
12 *Wall Street Journal* investigated how TikTok’s algorithm chose what content to promote to users
13 by having 100 bots scroll through the “For You” feed.²⁶⁶ Each bot was programmed with
14 interests, such as extreme sports, forestry, dance, astrology, and animals.²⁶⁷ Those interests were
15 not disclosed in the process of registering their accounts.²⁶⁸ Rather, the bots revealed their
16 interests through their behaviors, specifically the time they spent watching the videos TikTok
17 recommended to them. Consistent with TikTok’s internal “Algo 101” document, the *Wall Street*
18 *Journal* found that time spent watching videos to be “the most impactful data on [what] TikTok
19 serves you.”²⁶⁹

20 228. Over the course of 26 minutes, one bot watched 224 videos, lingering over videos

21 ²⁶³ *Id.*

22 ²⁶⁴ Wanda Pogue, *Move Over Google. TikTok is the Go-To Search Engine for Gen Z*, Adweek
23 (Aug. 4, 2022), [https://www.adweek.com/social-marketing/move-over-google-tiktok-is-the-go-](https://www.adweek.com/social-marketing/move-over-google-tiktok-is-the-go-to-search-engine-for-gen-z/)
24 [to-search-engine-for-gen-z/](https://www.adweek.com/social-marketing/move-over-google-tiktok-is-the-go-to-search-engine-for-gen-z/) [<https://perma.cc/327V-7T46>].

25 ²⁶⁵ *Misinformation Monitor*, NewsGuard (Sept. 2022),
26 <https://www.newsguardtech.com/misinformation-monitor/september-2022/>
27 [<https://perma.cc/XH7X-RYZY>].

28 ²⁶⁶ *Inside TikTok’s Algorithm: A WSJ Video Investigation*, Wall St. J. (July 21, 2021),
<https://www.wsj.com/articles/tiktok-algorithm-video-investigation-11626877477>
29 [<https://perma.cc/L3F2-DA4M>].

²⁶⁷ *Id.*

²⁶⁸ *Id.*

²⁶⁹ *Id.*

1 with hashtags for “depression” or “sad.”²⁷⁰ From then on, 93% of the videos TikTok showed this
2 account were about depression or sadness.²⁷¹

3 229. That is not an outlier. Guillaume Chaslot, a former engineer for Google who
4 worked on the algorithm for YouTube and the founder of Algo Transparency, explained that 90–
5 95% of the content users see on TikTok is based on its algorithm.²⁷²

6 230. “Even bots with general mainstream interests got pushed to the margin as
7 recommendations got more personalized and narrow.”²⁷³ Deep in these rabbit holes, the *Wall*
8 *Street Journal* found “users are more likely to encounter potential harmful content.”²⁷⁴ For
9 example, one video the *Wall Street Journal* encountered encouraged suicide, reading “Just go.
10 Leave. Stop trying. Stop pretending. You know it and so do they. Do Everyone a favor and
11 leave.”²⁷⁵

12 231. Chaslot explained why TikTok feeds users this content:

13 [T]he algorithm is able to find the piece of content that you’re vulnerable to. That
14 will make you click, that will make you watch, but it doesn’t mean you really like
15 it. And that it’s the content that you enjoy the most. It’s just the content that’s
most likely to make you stay on the platform.²⁷⁶

16 232. A follow-up investigation by the *Wall Street Journal* using bots found “that
17 through its powerful algorithms, TikTok can quickly drive minors—among the biggest users of
18 the app—into endless spools of content about sex and drugs.”²⁷⁷

19 233. The bots in this investigation were registered as users aged 13 to 15 and, as
20 before, programmed to demonstrate interest by how long they watched the videos TikTok’s
21

22
23 ²⁷⁰ *Id.*

24 ²⁷¹ *Id.*

25 ²⁷² *Id.*

26 ²⁷³ *Id.*

27 ²⁷⁴ *Id.*

28 ²⁷⁵ *Id.*

²⁷⁶ *Id.*

²⁷⁷ Rob Barry et al., *How TikTok Serves up Sex and Drug Videos to Minors*, Wall St. J. (Sept. 8,
2021), [https://www.wsj.com/articles/tiktok-algorithm-sex-drugs-minors-
11631052944?st=e92pu5734lvc7ta&reflink=desktopwebshare_permalink](https://www.wsj.com/articles/tiktok-algorithm-sex-drugs-minors-11631052944?st=e92pu5734lvc7ta&reflink=desktopwebshare_permalink)
[<https://perma.cc/UVX9-8MCG>].

1 algorithms served them.²⁷⁸ Videos that did not match their interests, the bots scrolled through
2 without pausing.²⁷⁹ The bots lingered on videos that matched any of their programmed
3 interests.²⁸⁰

4 234. Every second the bot hesitated or re-watched a video again proved key to what
5 TikTok recommended to the accounts, which the *Wall Street Journal* found was used to “drive
6 users of any age deep into rabbit holes of content[.]”²⁸¹

7 235. For example, one bot was programmed to pause on videos referencing drugs,
8 among other topics. The first day on the platform, the “account lingered on a video of a young
9 woman walking through the woods with a caption” referencing “stoner girls.”²⁸² The following
10 day the bot viewed a video of a “marijuana-themed cake.”²⁸³ The “majority of the next thousand
11 videos” TikTok directed at the teenage account “tout[ed] drugs and drug use, including
12 marijuana, psychedelics and prescription medication.”²⁸⁴

13 236. TikTok similarly zeroed in on and narrowed the videos it showed accounts
14 whether the bot was programmed to express interest in drugs, sexual imagery, or a multitude of
15 interests. In the first couple of days, TikTok showed the bots a “high proportion of popular
16 videos.”²⁸⁵ “But after three days, TikTok began serving a high number of obscure videos.”²⁸⁶

17 237. For example, a bot registered as a 13-year-old was shown a series of popular
18 videos upon signing up.²⁸⁷ The bot, which was programmed to demonstrate interest in sexual text
19 and imagery, also watched sexualized videos. Later, “[i]t experienced one of the most extreme
20 rabbit holes among the *Wall Street Journal*’s accounts. Many videos described how to tie knots
21 for sex, recover from violent sex acts and discussed fantasies about rape.”²⁸⁸ At one point, “more
22

23 ²⁷⁸ *Id.*

24 ²⁷⁹ *Id.*

25 ²⁸⁰ *Id.*

26 ²⁸¹ *Id.*

27 ²⁸² *Id.*

28 ²⁸³ *Id.*

²⁸⁴ *Id.*

²⁸⁵ *Id.*

²⁸⁶ *Id.*

²⁸⁷ *Id.*

²⁸⁸ *Id.*

1 than 90% of [one] account’s video feed was about bondage and sex.”²⁸⁹

2 238. At least 2,800 of the sexualized videos that were shown to the *Wall Street*
3 *Journal*’s bots were labeled as being for adults only.²⁹⁰ Yet, TikTok directed these videos to the
4 minor accounts because, as TikTok told the *Wall Street Journal*, it does not “differentiate
5 between videos it serves to adults and minors.”²⁹¹

6 239. TikTok also directed a concentrated stream of videos at accounts programmed to
7 express interest in a variety of topics. One such account was programmed to linger over hundreds
8 of Japanese film and television cartoons. “In one streak of 150 videos, all but four” of the videos
9 TikTok directed at the account, “featured Japanese animation—many with sexual themes.”²⁹²

10 240. The relentless stream of content intended to keep users engaged “can be
11 especially problematic for young people,” because they may lack the capability to stop watching,
12 says David Anderson, a clinical psychologist at the nonprofit mental health care provider, The
13 Child Mind Institute.²⁹³

14 241. In a similar investigation, the *Wall Street Journal* found TikTok “flood[ed] teen
15 users with videos of rapid-weight-loss competitions and ways to purge food that health
16 professionals say contribute to a wave of eating-disorder cases spreading across the country.”²⁹⁴

17 242. In this investigation, the *Wall Street Journal* analyzed the tens of thousands of
18 videos TikTok recommended to a dozen bots registered as 13-year-olds. As before, the bots were
19 given interests. Bots scrolled quickly through videos that did not match their interests and
20 lingered on videos that did.²⁹⁵ The accounts registered as 13-year-olds were programmed at
21 different times to display interests in weight loss, gambling, and alcohol.²⁹⁶

22 ²⁸⁹ *Id.*

23 ²⁹⁰ *Id.*

24 ²⁹¹ *Id.*

25 ²⁹² *Id.*

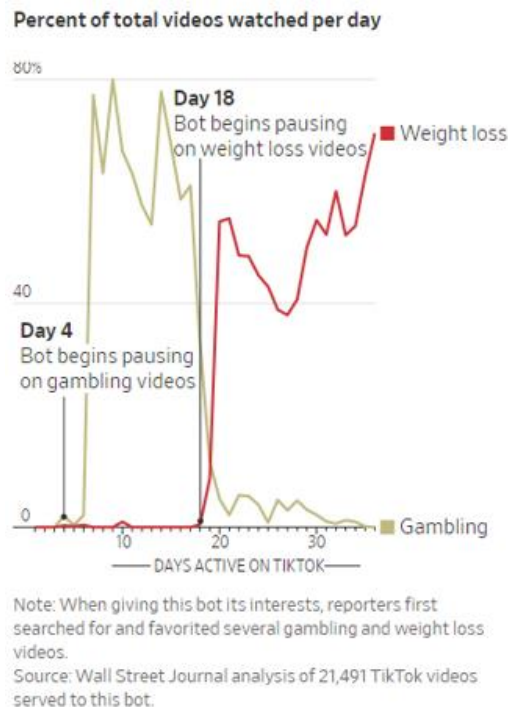
26 ²⁹³ *Id.*

27 ²⁹⁴ Tawnell D. Hobbs *et al.*, *The Corpse Bride Diet: How TikTok Inundates Teens with Eating-*
28 *Disorder Videos*, Wall St. J. (Dec. 17, 2021), [https://www.wsj.com/articles/how-tiktok-](https://www.wsj.com/articles/how-tiktok-inundates-teens-with-eating-disorder-videos-11639754848)
[inundates-teens-with-eating-disorder-videos-11639754848](https://www.wsj.com/articles/how-tiktok-inundates-teens-with-eating-disorder-videos-11639754848) [<https://perma.cc/TS8V-QQJX>]
(some of the accounts performed searches or sent other, undisclosed signals indicating their preferences).

²⁹⁵ *Id.*

²⁹⁶ *Id.*

243. “TikTok’s algorithm quickly g[a]ve[] users the content they’ll watch, for as long as they’ll watch it.”²⁹⁷ For example, TikTok streamed gambling videos to a bot registered to a 13-year-old after it first searched for and favorited several such videos.²⁹⁸ When the bot began demonstrating interest in weight loss videos, the algorithm adapted quickly, as this chart demonstrates.²⁹⁹



244. After the change in programming, weight-loss videos accounted for well over 40% of the content TikTok’s algorithm recommended to the user.³⁰⁰

245. The other accounts were also flooded with weight-loss videos. Over the course of about 45 days, TikTok inundated the accounts with more than 32,000 such videos, “many promoting fasting, offering tips for quickly burning belly fat and pushing weight-loss detox programs and participation in extreme weight-loss competitions.”³⁰¹ Some encouraged purging, eating less than 300 calories a day, consuming nothing but water some days, and other hazardous

²⁹⁷ *Id.*

²⁹⁸ *Id.*

²⁹⁹ *Id.*

³⁰⁰ *Id.*

³⁰¹ *Id.*

1 diets.³⁰²

2 246. According to Alyssa Moukheiber, a treatment center dietitian, TikTok’s powerful
3 algorithm and the harmful streams of content it directs at young users can tip them into unhealthy
4 behaviors or trigger a relapse.³⁰³

5 247. Unfortunately, it has for the several teenage girls interviewed by the *Wall Street*
6 *Journal*, who reported developing eating disorders or relapsing after being influenced by the
7 extreme diet videos TikTok promoted to them.³⁰⁴

8 248. They are not alone. Katie Bell, a co-founder of the Healthy Teen Project, “said the
9 majority of her 17 teenage residential patients told her TikTok played a role in their eating
10 disorders.”³⁰⁵

11 249. Others, like Stephanie Zerwas, an associate professor of psychiatry at the
12 University of North Carolina at Chapel Hill, could not recount how many of her young patients
13 told her that “I’ve started falling down this rabbit hole, or I got really into this or that influencer
14 on TikTok, and then it started to feel like eating-disorder behavior was normal, that everybody
15 was doing that.”³⁰⁶

16 250. This trend extends nationwide. The National Association of Anorexia Nervosa
17 and Associated Disorders has fielded 50% more calls to its hotline since the pandemic began,
18 most of whom it says are from young people or parents on their behalf.³⁰⁷

19 251. Despite the ample evidence that TikTok’s design and operation of its platform
20 harms the tens of millions of youth who use it, TikTok continues to manipulate them into
21 returning to the platform again and again so that it may serve them ads in between the exploitive
22 content it amplifies.

23
24
25
26 ³⁰² *Id.*

27 ³⁰³ *Id.*

28 ³⁰⁴ *Id.*

³⁰⁵ *Id.*

³⁰⁶ *Id.*

³⁰⁷ *Id.*

1 **4. YouTube Intentionally Marketed to and Designed Its Social Media Platform**
2 **for Youth Users, Substantially Contributing to the Mental Health Crisis**

3 **a. The YouTube Platform**

4 252. YouTube is a platform where users can post, share, view, and comment on videos
5 related to a vast range of topics. The platform became available publicly in December 2005 and
6 was acquired by Google in 2006.

7 253. YouTube reports that today it has over 2 billion monthly logged-in users.³⁰⁸ Even
8 more people use YouTube each month because consumers do not have to register an account to
9 view a video on YouTube. As a result, anyone can view most content on YouTube—regardless
10 of age.

11 254. Users, whether logged in or not, watch *billions of hours of videos every day*.³⁰⁹

12 255. Users with accounts can post their own videos, comment on others, and since
13 2010 express their approval of videos through “likes.”³¹⁰

14 256. Beginning in 2008 and through today, YouTube has recommended videos to
15 users.³¹¹ Early on, the videos YouTube recommended to users were the most popular videos
16 across the platform.³¹² YouTube admits “[n]ot a lot of people watched those videos[,]” at least
17 not based on its recommendation.³¹³

18 257. Since then, YouTube has designed and refined its recommendation system using
19 machine learning algorithms that today take into account a user’s “likes,” time spent watching a
20 video, and other behaviors to tailor its recommendations to each user.³¹⁴

21
22 ³⁰⁸ *YouTube for Press*, YouTube, <https://blog.youtube/press/> [<https://perma.cc/GC4P-PVBW>]
23 (last visited June 26, 2023).

24 ³⁰⁹ *Id.*

25 ³¹⁰ Josh Lowensohn, *YouTube’s big redesign goes live to everyone*, CNET (Mar. 31, 2010),
26 <https://www.cnet.com/culture/youtubes-big-redesign-goes-live-to-everyone/>
27 [<https://perma.cc/Y6S6-KGXG>].

28 ³¹¹ Cristos Goodrow, *On YouTube’s recommendation system*, YouTube (Sept. 15, 2021),
<https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>
[<https://perma.cc/WM6C-D36J>].

³¹² *Id.*

³¹³ *Id.*

³¹⁴ *Id.*

258. YouTube automatically plays those recommendations for a user after they finish watching a video. This feature, known as “autoplay,” was implemented in 2015. YouTube turns the feature on by default, which means videos automatically and continuously play for users unless they turn it off.³¹⁵

259. YouTube purports to disable by default its autoplay feature for users aged 13–17.³¹⁶ But, as mentioned above, YouTube does not require users to log in or even have an account to watch videos. For them or anyone who does not self-report an age between 13 and 17, YouTube defaults to automatically playing the videos its algorithm recommends to the user.

b. YouTube Markets Its Platform to Youth

260. The primary way YouTube makes money is through advertising. In 2021 alone, YouTube made \$19 billion in ad revenue.³¹⁷

261. “In 2012, YouTube concluded that the more people watched, the more ads it could run[.]”³¹⁸ “So YouTube . . . set a company-wide objective to reach one billion hours of viewing a day[.]”³¹⁹

262. “[T]he best way to keep eyes on the site,” YouTube realized, was “recommending videos, alongside a clip or after one was finished.”³²⁰ That is what led to the development of its recommendation algorithm and autoplay feature described above. *See supra* Section IV.D.4.a.

263. YouTube has long known that youth use its platforms in greater proportion than older demographics.

³¹⁵ *Autoplay videos*, YouTube Help, <https://support.google.com/youtube/answer/6327615?hl=en#:~:text=For%20users%20aged%2013%2D17,turned%20off%20Autoplay%20for%20you> [<https://perma.cc/RYN4-LA55>] (last visited June 26, 2023).

³¹⁶ *Id.*

³¹⁷ *Alphabet Inc., Annual Report, Form 10-k* at 60 (2021), <https://www.sec.gov/ix?doc=/Archives/edgar/data/1652044/000165204422000019/goog-20211231.htm> [<https://perma.cc/9SJ8-FGW8>].

³¹⁸ Mark Bergen, *YouTube Executive Ignores Warnings, Letting Toxic Videos Run Rampant*, Bloomberg (Apr. 2, 2019), <https://www.bloomberg.com/news/features/2019-04-02/youtube-executives-ignored-warnings-letting-toxic-videos-run-rampant?leadSource=uverify%20wall> [<https://perma.cc/98GG-VNSS>].

³¹⁹ *Id.*

³²⁰ *Id.*

1 264. Yet, YouTube has not implemented even rudimentary protocols to verify the age
2 of users. Anyone can watch a video on YouTube without registering an account or reporting their
3 age.

4 265. Instead, YouTube leveraged its popularity among youth to increase its revenue
5 from advertisements by marketing its platform to popular brands of children’s products. For
6 example, Google pitched Mattel, the maker of Barbie and other popular kids’ toys, by telling its
7 executives that “YouTube is today’s leader in reaching children age 6–11 against top TV
8 channels.”³²¹ When presenting to Hasbro, the maker of Play-Doh, My Little Pony, and other
9 kids’ toys, Google touted that “YouTube was unanimously voted as the favorite website for kids
10 2-12,” and that “93% of tweens visit YouTube to watch videos.”³²² In a different presentation to
11 Hasbro, YouTube was referred to as “[t]he new ‘Saturday Morning Cartoons,’” and claimed that
12 YouTube was the “#1 website regularly visited by kids” and “the #1 source where children
13 discover new toys + games.”³²³

14 266. In addition to turning a blind eye towards underage users of its platform,
15 YouTube developed and marketed a version of YouTube specifically for children under the age
16 of 13.

17 267. YouTube’s efforts to attract young users have been successful. *See supra*
18 Section IV.A. A vast majority, 95%, of children ages 13–17 have used YouTube.³²⁴

19 **c. YouTube Intentionally Maximizes the Time Users Spend on its Platform**

20 268. Google designed YouTube to maximize user engagement, predominantly through
21 the amount of time users spend watching videos. To that end, Google employs design elements
22 and complex algorithms to create a never-ending stream of videos intended to grip user’s
23 attention.

24 269. Like the other Defendants’ social media platforms, Google developed features
25

26 ³²¹ Complaint for Permanent Injunction, Civil Penalties, and Other Equitable Relief, Exhibit A,
27 *FTC v. Google LLC et al.*, No. 1-19-cv-02642-BAH (D.D.C. Sept. 4, 2019), ECF No. 1-1.

28 ³²² *Id.* Exhibit B.

³²³ *Id.* Exhibit C.

³²⁴ *Id.*

1 that exploit psychological phenomenon such as IVR to maximize the time users spend on
2 YouTube.

3 270. YouTube uses design elements that operate on principles of IVR to drive both
4 YouTube content creators and YouTube viewers into habitual, excessive use. Google designed
5 YouTube to allow users to like, comment, and share videos and to subscribe to content creator's
6 channels. These features serve as rewards for users who create and upload videos to YouTube.
7 As described above, receiving a like indicates others' approval and activates the reward region of
8 the brain.³²⁵ The use of likes, therefore, encourages users to use YouTube over and over, seeking
9 future pleasurable experiences.

10 271. YouTube also uses IVR to encourage users to view others content. One of the
11 ways Google employs IVR into YouTube's design is through subscriber push notifications and
12 emails, which are designed to prompt users to watch YouTube content and encourages excessive
13 use of the platform. When a user "subscribes" to another user's channel, they receive
14 notifications every time that user uploads new content, prompting them to open YouTube and
15 watch the video.³²⁶

16 272. One of YouTube's defining features is its panel of recommended videos.
17 YouTube recommends videos to users on both the YouTube home page and on every individual
18 video page in an "Up Next" panel.³²⁷ This list automatically populates next to the video a user is
19 currently watching. This recommended video list is a never-ending feed of videos intended to
20 keep users on the app watching videos without having to affirmatively click or search for other
21 videos. This constant video stream, comprised of videos recommended by YouTube's
22 algorithms, is the primary way Google increases the time users spend on YouTube.

24 ³²⁵ See, e.g., Lauren E. Sherman et al., *The Power of the Like in Adolescence: Effects of Peer*
25 *Influence on Neural and Behavioral Responses to Social Media*, 27(7) Psych. Sci. 1027–35
(July 2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5387999/> [<https://perma.cc/9T58-KJBG>].

26 ³²⁶ *Manage YouTube Notifications*, YouTube,
27 <https://support.google.com/youtube/answer/3382248?hl=en&co=GENIE.Platform%3DDesktop>
28 [<https://perma.cc/6NT6-NQ9M>] (last visited June 26, 2023).

³²⁷ *Recommended Videos*, YouTube, [https://www.youtube.com/howyoutubeworks/product-](https://www.youtube.com/howyoutubeworks/product-features/recommendations/)
[features/recommendations/](https://www.youtube.com/howyoutubeworks/product-features/recommendations/) [<https://perma.cc/WN7Y-F2ZH>] (last visited June 26, 2023).

1 **d. YouTube’s Algorithms are Manipulative**

2 273. Google uses algorithms throughout YouTube to recommend videos to users.
3 These algorithms select videos that populate the YouTube homepage, rank results in user
4 searches, and suggest videos for viewers to watch next. These algorithms are manipulative by
5 design and increase the amount of time users spend on YouTube.

6 274. Google began building the YouTube recommendation system in 2008.³²⁸ When
7 Google initially developed its recommendation algorithms, the end goal was to maximize the
8 amount of time users spend watching YouTube videos. A YouTube spokesperson admitted as
9 much, saying YouTube’s recommendation system was initially set up to “optimize” the amount
10 of time users watch videos.³²⁹

11 275. Former YouTube engineer Guillame Chaslot has also stated that when he worked
12 for YouTube designing its recommendation algorithm, the priority was to keep viewers on the
13 site for as long as possible to maximize “watch time.”³³⁰ Chaslot further stated that “[i]ncreasing
14 users’ watch time is good for YouTube’s business model” because the more people watch
15 videos, the more ads they see, resulting in an increase of YouTube’s advertising revenue.³³¹

16 276. Early on, one of the primary metrics behind YouTube’s recommendation
17 algorithm was clicks. As YouTube describes, “[c]licking on a video provides a strong indication
18 that you will also find it satisfying.”³³² But as YouTube learned, clicking on a video does not
19

20 ³²⁸ Cristos Goodrow, *On YouTube’s Recommendation System*, YouTube (Sept. 15, 2021),
21 <https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>
22 [<https://perma.cc/WM6C-D36J>].

23 ³²⁹ Ben Popken, *As algorithms take over, YouTube’s recommendations highlight a human*
24 *problem*, NBC (Apr. 19, 2018), [https://www.nbcnews.com/tech/social-media/algorithms-take-](https://www.nbcnews.com/tech/social-media/algorithms-take-over-youtube-s-recommendations-highlight-human-problem-n867596)
25 [over-youtube-s-recommendations-highlight-human-problem-n867596](https://www.nbcnews.com/tech/social-media/algorithms-take-over-youtube-s-recommendations-highlight-human-problem-n867596) [[https://perma.cc/2EV7-](https://perma.cc/2EV7-GUCT)
26 [GUCT](https://perma.cc/2EV7-GUCT)].

27 ³³⁰ William Turton, *How YouTube’s algorithm prioritizes conspiracy theories*, Vice (Mar. 5,
28 2018), [https://www.vice.com/en/article/d3w9ja/how-youtubes-algorithm-prioritizes-](https://www.vice.com/en/article/d3w9ja/how-youtubes-algorithm-prioritizes-conspiracy-theories)
29 [conspiracy-theories](https://www.vice.com/en/article/d3w9ja/how-youtubes-algorithm-prioritizes-conspiracy-theories) [<https://perma.cc/8VC9-AYZY>].

30 ³³¹ Jesselyn Cook & Sebastian Murdock, *YouTube is a Pedophile’s Paradise*, Huffington Post
(Mar. 20, 2020), [https://www.huffpost.com/entry/youtube-pedophile-](https://www.huffpost.com/entry/youtube-pedophile-paradise_n_5e5d79d1c5b6732f50e6b4db)
31 [paradise_n_5e5d79d1c5b6732f50e6b4db](https://www.huffpost.com/entry/youtube-pedophile-paradise_n_5e5d79d1c5b6732f50e6b4db) [<https://perma.cc/8GJ2-KXL4>].

32 ³³² Cristos Goodrow, *On YouTube’s Recommendation System*, YouTube (Sept. 15, 2021),
33 <https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>
34 [<https://perma.cc/WM6C-D36J>].

mean a user actually watched it. Thus, in 2012, YouTube also started tracking watch time—the amount of time a user spends watching a video.³³³ YouTube made this switch to keep people watching for as long as possible.³³⁴ In YouTube’s own words, this switch was successful. “These changes have so far proved very positive -- primarily less clicking, more watching. We saw the amount of time viewers spend watching videos across the site increase immediately[.]”³³⁵ And in 2016, YouTube started measuring “valued watchtime” via user surveys to ensure that viewers are satisfied with their time spent watching videos on YouTube.³³⁶ All of these changes to YouTube’s algorithms were made to ensure that users spend more time watching videos and ads.

277. YouTube’s current recommendation algorithm is based on deep-learning neural networks that retune its recommendations based on the data fed into it.³³⁷ While this algorithm is incredibly complex, its process can be broken down into two general steps. First, the algorithm compiles a shortlist of several hundred videos by finding videos that match the topic and other features of the video a user is currently watching.³³⁸ Then the algorithm ranks the list according to the user’s preferences, which the algorithm learns by tracking a user’s clicks, likes, and other interactions.³³⁹ In short, the algorithms track and measure a user’s previous viewing habits and

³³³ *Id.*

³³⁴ Dave Davies, *How YouTube became one of the planet’s most influential media businesses*, NPR (Sept. 8, 2022), <https://www.npr.org/2022/09/08/1121703368/how-youtube-became-one-of-the-planets-most-influential-media-businesses> [<https://perma.cc/JR2R-E7CF>].

³³⁵ Eric Meyerson, *YouTube Now: Why We Focus on Watch Time*, YouTube (Aug. 10, 2012), <https://blog.youtube/news-and-events/youtube-now-why-we-focus-on-watch-time/> [<https://perma.cc/5D2X-QUZP>].

³³⁶ Cristos Goodrow, *On YouTube’s Recommendation System*, YouTube (Sept. 15, 2021), <https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/> [<https://perma.cc/WM6C-D36J>].

³³⁷ Alexis C. Madrigal, *How YouTube’s Algorithm Really Works*, Atl. (Nov. 8, 2018), <https://www.theatlantic.com/technology/archive/2018/11/how-youtubes-algorithm-really-works/575212/> [<https://perma.cc/V6B7-64LA>]; Paul Covington *et al.*, *Deep Neural Networks for YouTube Recommendations*, Google (2016), <https://storage.googleapis.com/pub-tools-public-publication-data/pdf/45530.pdf> [<https://perma.cc/P3V7-BDNF>].

³³⁸ Karen Hao, *YouTube is experimenting with ways to make its algorithm even more addictive*, MIT Tech. Rev. (Sept. 27, 2019), <https://www.technologyreview.com/2019/09/27/132829/youtube-algorithm-gets-more-addictive/> [<https://perma.cc/CC7F-S7DN>]; Paul Covington *et al.*, *Deep Neural Networks for YouTube Recommendations*, Google (2016), <https://storage.googleapis.com/pub-tools-public-publication-data/pdf/45530.pdf> [<https://perma.cc/P3V7-BDNF>].

³³⁹ *Id.*

1 then finds and recommends other videos the algorithm thinks will hold the consumer’s attention.

2 278. YouTube’s recommendation system “is constantly evolving, learning every day
3 from over 80 billion pieces of information.”³⁴⁰ Some of the information the recommendation
4 algorithm relies on to deliver recommended videos to users includes users’ watch and search
5 history, channel subscriptions, clicks, watch time, survey responses, shares, likes, dislikes, users’
6 location (country) and the time of day.³⁴¹

7 279. The recommendation algorithm can determine what “signals” or factors are more
8 important to individual users.³⁴² For example, if a user shares every video they watch, including
9 videos the user gives a low rating, the algorithm learns not to heavily factor the user’s shares
10 when recommending content.³⁴³ Thus, the recommendation algorithm “develops dynamically” to
11 individual user’s viewing habits and makes highly specific recommendations to keep individual
12 users watching videos.³⁴⁴

13 280. In addition to the algorithm’s self-learning, Google engineers consistently update
14 YouTube’s recommendation and ranking algorithms, making several updates every month,
15 according to YouTube Chief Product Officer Neal Mohan.³⁴⁵ The end goal is to increase the
16 amount of time users spend watching content on YouTube.

17 281. Because Google has designed and refined its algorithms to be manipulative, these
18 algorithms are incredibly successful at getting users to view content based on the algorithm’s
19 recommendation. Mohan stated in 2018 that YouTube’s AI-driven recommendations are

21 ³⁴⁰ Cristos Goodrow, *On YouTube’s Recommendation System*, YouTube (Sept. 15, 2021),
22 <https://blog.youtube/inside-youtube/on-youtubes-recommendation-system/>
23 [<https://perma.cc/WM6C-D36J>].

24 ³⁴¹ *Recommended Videos*, YouTube, [https://www.youtube.com/howyoutubeworks/product-](https://www.youtube.com/howyoutubeworks/product-features/recommendations/#signals-used-to-recommend-content)
25 [features/recommendations/#signals-used-to-recommend-content](https://www.youtube.com/howyoutubeworks/product-features/recommendations/#signals-used-to-recommend-content) [[https://perma.cc/WN7Y-](https://perma.cc/WN7Y-F2ZH)
26 [F2ZH](https://perma.cc/WN7Y-F2ZH)] (last visited June 26, 2023).

25 ³⁴² *Id.*

26 ³⁴³ *Id.*

26 ³⁴⁴ *Id.*

27 ³⁴⁵ Nilay Patel, *YouTube Chief Product Officer Neal Mohan on The Algorithm, Monetization,*
28 *and the Future for Creators*, Verge (Aug. 3, 2021),
<https://www.theverge.com/22606296/youtube-shorts-fund-neal-mohan-decoder-interview>
[<https://perma.cc/2HWP-YSL4>].

1 responsible for 70% of the time users spend on YouTube.³⁴⁶ In other words, 70% of all YouTube
2 content that users watch was recommended to users by YouTube’s algorithms as opposed to
3 users purposely searching for and identifying the content they watch.

4 282. Mohan also stated that recommendations keep mobile device users watching
5 YouTube for more than 60 minutes at a time on average.³⁴⁷

6 283. Given that people watch more than one billion hours of YouTube videos daily,³⁴⁸
7 YouTube’s recommendation algorithms are responsible for hundreds of millions of hours that
8 users spend watching videos on YouTube.

9 **e. YouTube’s Conduct in Designing and Operating its Platform Has Harmed**
10 **Youth Mental Health**

11 284. By designing YouTube’s algorithms to prioritize and maximize the amount of
12 time users spend watching videos, Google has harmed youth mental health. In particular,
13 YouTube has harmed youth mental health by recommending exploitive content to youth through
14 its algorithms.

15 285. YouTube’s algorithms push its young users down rabbit holes where they are
16 likely to encounter content that is violent, sexual, or encourages self-harm, among other types of
17 harmful content.

18 286. Research by the Tech Transparency Project (“TTP”) shows that YouTube Kids
19 fed children content that involved drug culture, guns, and beauty and diet tips that could lead to
20 harmful body image issues.³⁴⁹ Among the videos TTP found were step-by-step instructions on
21 how to conceal a gun, guides on how to bleach one’s face at home, and workout videos
22

23 ³⁴⁶ Joan E. Solsman, *YouTube’s AI is the puppet master over most of what you watch*, CNET
24 (Jan. 20, 2018), [https://www.cnet.com/tech/services-and-software/youtube-ces-2018-neal-](https://www.cnet.com/tech/services-and-software/youtube-ces-2018-neal-mohan/)
25 [mohan/](https://www.cnet.com/tech/services-and-software/youtube-ces-2018-neal-mohan/) [<https://perma.cc/Q6GM-SSDG>].

26 ³⁴⁷ *Id.*

27 ³⁴⁸ Shira Ovide, *The YouTube Rabbit Hole is Nuanced*, N.Y. Times (Apr. 21, 2022),
<https://www.nytimes.com/2022/04/21/technology/youtube-rabbit-hole.html>
28 [<https://perma.cc/7NCH-GHBV>].

³⁴⁹ Alex Hern, *YouTube Kids shows videos promoting drug culture and firearms to toddlers*,
Guardian (May 5, 2022), [https://www.theguardian.com/technology/2022/may/05/youtube-kids-](https://www.theguardian.com/technology/2022/may/05/youtube-kids-shows-videos-promoting-drug-culture-firearms-toddlers)
[shows-videos-promoting-drug-culture-firearms-toddlers](https://www.theguardian.com/technology/2022/may/05/youtube-kids-shows-videos-promoting-drug-culture-firearms-toddlers) [<https://perma.cc/UMK2-H43F>].

1 emphasizing the importance of burning calories and telling kids to “[w]iggle your jiggle.”³⁵⁰ This
2 research shows that YouTube Kids not only lets inappropriate content slip through its
3 algorithmic filters, but actively directed the content to kids through its recommendation engine.

4 287. Similar examples abound. Amanda Kloer, a campaign director with the child
5 safety group ParentsTogether, spent an hour on her child’s YouTube Kids profile and found
6 videos “encouraging kids how to make their shirts sexier, a video in which a little boy pranks a
7 girl over her weight, and a video in which an animated dog pulls objects out of an unconscious
8 animated hippo’s butt.”³⁵¹ Another parent recounted that YouTube Kids’ autoplay function led
9 her 6-year-old daughter to an animated video that encouraged suicide.³⁵²

10 288. Other youth are fed content by YouTube’s algorithms that encourages self-harm.
11 As reported by PBS Newshour, a middle-schooler named Olivia compulsively watched YouTube
12 videos every day after she came home from school.³⁵³ Over time she became depressed and
13 started searching for videos on how to commit suicide. Similar videos then gave her the idea of
14 overdosing. Weeks later she was in the hospital after “downing a bottle of Tylenol.”³⁵⁴
15 Ultimately, she was admitted into rehab for digital addiction because of her compulsive
16 YouTube watching.³⁵⁵

17 289. According to the Pew Research Center, 46% of parents say their child has
18 encountered inappropriate videos on YouTube.³⁵⁶ And children are not encountering these videos
19

20 ³⁵⁰ *Guns, Drugs, and Skin Bleaching: YouTube Kids Poses Risks to Children*, Tech Transparency
21 Project (May 5, 2022), <https://www.techtransparencyproject.org/articles/guns-drugs-and-skin-bleaching-youtube-kids-still-poses-risks-children> [<https://perma.cc/EHB9-MBX8>].

22 ³⁵¹ Rebecca Heilweil, *YouTube’s kids app has a rabbit hole problem*, Vox (May 12, 2021),
23 <https://www.vox.com/recode/22412232/youtube-kids-autoplay> [<https://perma.cc/C6BA-AU6E>].

24 ³⁵² *Id.*

25 ³⁵³ Lesley McClurg, *After compulsively watching YouTube, teenage girl lands in rehab for ‘digital addiction’*, PBS (May 16, 2017), <https://www.pbs.org/newshour/health/compulsively-watching-youtube-teenage-girl-lands-rehab-digital-addiction> [<https://perma.cc/M594-VB5A>].

26 ³⁵⁴ *Id.*

27 ³⁵⁵ *Id.*

28 ³⁵⁶ Brooke Auxier et al., *Parenting Children in The Age of Screens: 2. Parental views about YouTube*, Pew Rsch. Ctr. (July 28, 2020), <https://www.pewresearch.org/internet/2020/07/28/parental-views-about-youtube/> [<https://perma.cc/U7LH-D62Q>].

1 on their own volition. Rather, they are being fed harmful and inappropriate videos through
2 YouTube's algorithms. Again, YouTube's AI-driven recommendations are responsible for 70%
3 of the time users spend on YouTube.³⁵⁷

4 290. Other reports have also found that YouTube's recommendation algorithm
5 suggests a wide array of harmful content, including videos that feature misinformation, violence,
6 and hate speech, along with other content that violates YouTube's policies.³⁵⁸ A 2021
7 crowdsourced investigation from the Mozilla Foundation involving 37,000 YouTube users
8 revealed that 71% of all reported negative user experiences came from videos recommended by
9 YouTube to users.³⁵⁹ And users were 40% more likely to report a negative experience with a
10 video recommended by YouTube's algorithm than with a video they searched for.³⁶⁰

11 291. The inappropriate and disturbing content YouTube's algorithms expose children
12 to has adverse effects on mental health. Mental health experts have warned that YouTube is a
13 growing source of anxiety and inappropriate sexual behavior among kids under the age of 13.³⁶¹

14 292. Even though much of the harmful content YouTube's algorithms feed to youth is
15 harmful, it can activate the reward circuitry in the brain such that it encourages youth to spend
16 more time watching videos on YouTube. According to Donna Volpita, founder of The Center for
17 Resilient Leadership, watching "fear-inducing videos cause the brain to receive a small amount
18 of dopamine," which acts as a reward and creates a desire to do something over and over.³⁶² This
19 dopaminergic response is in addition to the reward stimulus YouTube provides users through
20 IVR.

21
22 ³⁵⁷ Joan E. Solsman, *YouTube's AI is the puppet master over most of what you watch*, CNET
23 (Jan. 20, 2018), [https://www.cnet.com/tech/services-and-software/youtube-ces-2018-neal-](https://www.cnet.com/tech/services-and-software/youtube-ces-2018-neal-mohan/)
[mohan/ \[https://perma.cc/Q6GM-SSDG\]](https://perma.cc/Q6GM-SSDG).

24 ³⁵⁸ Brandy Zadrozny, *YouTube's recommendations still push harmful videos, crowdsourced*
25 *study finds*, NBC News (July 17, 2021), [https://www.nbcnews.com/tech/tech-news/youtubes-](https://www.nbcnews.com/tech/tech-news/youtubes-recommendations-still-push-harmful-videos-crowdsourced-study-rcna1355)
[recommendations-still-push-harmful-videos-crowdsourced-study-rcna1355](https://perma.cc/HT4Q-QSN5)
26 [\[https://perma.cc/HT4Q-QSN5\]](https://perma.cc/HT4Q-QSN5).

27 ³⁵⁹ *Id.*

28 ³⁶⁰ *Id.*

³⁶¹ Josephine Bila, *YouTube's dark side could be affecting your child's mental health*, CNBC
(Feb. 13, 2018), [https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-](https://www.cnbc.com/2018/02/13/youtube-is-causing-stress-and-sexualization-in-young-children.html)
[sexualization-in-young-children.html \[https://perma.cc/CRQ9-6VJV\]](https://perma.cc/CRQ9-6VJV).

³⁶² *Id.*

293. Mental health professionals across the country have seen an increase in children experiencing mental health issues because of YouTube. Natasha Daniels, a child psychotherapist in Arizona, said she has seen a rise in cases of children suffering from anxiety because of videos they watched on YouTube.³⁶³ Because of their anxiety, these children “exhibit loss of appetite, sleeplessness, crying fits, and fear.”³⁶⁴

294. In addition to causing anxiety, watching YouTube is also associated with insufficient sleep.³⁶⁵ In one study on the effect of app use and sleep, YouTube was the only app consistently associated with negative sleep outcomes.³⁶⁶ For every 15 minutes teens spent watching YouTube, they had a 24% greater chance of getting fewer than seven hours of sleep.³⁶⁷ YouTube is particularly problematic on this front because the recommendation and autoplay feature make it “so easy to finish one video” and watch the next, said Dr. Alon Avidan, director of the UCLA Sleep Disorders Center.³⁶⁸ In turn, insufficient sleep is associated with poor health outcomes.³⁶⁹ Thus, YouTube exacerbates an array of youth mental health issues by contributing to sleep deprivation.

295. Despite the extensive evidence that YouTube’s design and algorithms harms millions of youth, Google continues to promote YouTube unchanged, manipulating youth into staying on the platform and watching more and more videos so that it can increase its ad revenue.

E. The Effect of Social Media Use on Schools

296. School districts are uniquely harmed by the current youth mental health crisis.

³⁶³ *Id.*

³⁶⁴ *Id.*

³⁶⁵ Meg Pillion *et al.*, *What’s ‘app’-ning to adolescent sleep? Links between device, app use, and sleep outcomes*, 100 *Sleep Med.* 174–82 (Dec. 2022), <https://www.sciencedirect.com/science/article/abs/pii/S1389945722010991?via%3Dihub> [<https://doi.org/10.1016/j.sleep.2022.08.004>].

³⁶⁶ *Id.*

³⁶⁷ *Id.*

³⁶⁸ Cara Murez, *One App is Especially Bad for Teens’ Sleep*, U.S. News (Sept. 13, 2022), <https://www.usnews.com/news/health-news/articles/2022-09-13/one-app-is-especially-bad-for-teens-sleep> [<https://perma.cc/L8HD-ZTZ2>].

³⁶⁹ Jessica C. Levenson *et al.*, *The Association Between Social Media Use and Sleep Disturbance Among Young Adults*, 85 *Preventive Med.* 36–41 (Apr. 2016), <https://www.sciencedirect.com/science/article/abs/pii/S0091743516000025> [<https://doi.org/10.1016/j.ypmed.2016.01.001>].

1 This is because schools are one of the main providers for mental health services for school-aged
2 children.³⁷⁰ Indeed, over 3.1 million children ages 12–17 received mental health services through
3 an education setting in 2020, more than any other non-specialty mental health service setting.³⁷¹

4 297. Most schools offer mental health services to students. In the 2021–2022 school
5 year, 96% of public schools reported offering at least one type of mental health service to their
6 students.³⁷² But 88% of public schools did not strongly agree that they could effectively provide
7 mental health services to all students in need.³⁷³ The most common barriers to providing
8 effective mental health services in public schools are (1) insufficient number of mental health
9 professionals; (2) inadequate access to licensed mental health professionals; and (3) inadequate
10 funding.³⁷⁴ Student opinions also reflect that schools are unable to provide adequate mental
11 health services. Less than a quarter of students in grades 6–12 report accessing counseling or
12 psychological services when they are upset, stressed, or having a problem.³⁷⁵ And of the students
13 who access mental health services, only 41% of middle schoolers and 36% of high schoolers are
14 satisfied with the services they receive.³⁷⁶

15 298. In part, schools are struggling to provide adequate mental health services because
16 of the increase in students seeking these services. More than two-thirds of public schools
17 reported an increase in the percent of students seeking mental health services from school since
18 the start of the pandemic.³⁷⁷

20 ³⁷⁰ *National Survey on Drug Use and Health*, SAMHSA (2019 & 1st & 4th Qs. 2020),
21 <https://www.samhsa.gov/data/report/2020-nsduh-detailed-tables> [<https://perma.cc/NA32-JYQX>].

22 ³⁷¹ *Id.*

23 ³⁷² *Roughly Half of Public Schools Report That They Can Effectively Provide Mental Health*
24 *Services to All Students In Need*, Nat'l Ctr. Educ. Stat. (May 31, 2022),
https://nces.ed.gov/whatsnew/press_releases/05_31_2022_2.asp [<https://perma.cc/P4K9-4HF7>].

25 ³⁷³ *Id.*

26 ³⁷⁴ *Id.*

27 ³⁷⁵ *Insights From the Student Experience, Part I: Emotional and Mental Health at 2*, YouthTruth
28 (2022), https://youthtruthsurvey.org/wp-content/uploads/2022/10/YouthTruth_EMH_102622.pdf [<https://perma.cc/UHV7-RNQ6>].

³⁷⁶ *Id.*

³⁷⁷ *Roughly Half of Public Schools Report That They Can Effectively Provide Mental Health*
Services to All Students In Need, Nat'l Ctr. Educ. Stat. (May 31, 2022),
https://nces.ed.gov/whatsnew/press_releases/05_31_2022_2.asp [<https://perma.cc/P4K9-4HF7>].

299. During this same period, adolescents increased their social media use, also raising levels of excessive and problematic use of digital media.³⁷⁸ And these higher rates of social media use are related to higher “ill-being.”³⁷⁹ Thus, the increase in adolescent social media use during the pandemic has caused an increase in adolescents experiencing mental health problems.

300. That relationship is reflected in reports from public schools. Over 75% of public schools reported an increase in staff expressing concerns about student depression, anxiety, and other disturbances since the start of the pandemic.³⁸⁰ Students receiving mental health services in educational settings predominately do so because they “[f]elt depressed,” “[t]hought about killing [themselves] or tried to” or “[f]elt very afraid and tense.”³⁸¹

301. Anxiety disorders are also up, affecting 31.9% of adolescents between 13 and 18 years old.³⁸² “Research shows that untreated teenagers with anxiety disorders are at higher risk to perform poorly in school, miss out on important social experiences, and engage in substance abuse.”³⁸³

302. According to the National Alliance on Mental Illness, “[s]tudents ages 6–17 with mental, emotional or behavioral concerns are **3x times more likely** to repeat a grade,” and “[h]igh school students with significant symptoms of depression are more than **twice as likely** to drop out compared to their peers.”³⁸⁴

³⁷⁸ Laura Marciano et al., *Digital Media Use and Adolescents’ Mental Health During the Covid-19 Pandemic: A Systematic Review and Meta-Analysis*, Frontiers Pub. Health (Feb. 2022), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8848548/> [<https://perma.cc/3ZSA-UBDF>].

³⁷⁹ *Id.*

³⁸⁰ *Roughly Half of Public Schools Report That They Can Effectively Provide Mental Health Services to All Students In Need*, Nat’l Ctr. Educ. Stat. (May 31, 2022), https://nces.ed.gov/whatsnew/press_releases/05_31_2022_2.asp [<https://perma.cc/P4K9-4HF7>].

³⁸¹ Rachel N. Lipari et al., *Adolescent Mental Health Service Use and Reasons for Using Services in Specialty, Educational, and General Medical Settings*, SAMHSA (May 5, 2016), https://www.samhsa.gov/data/sites/default/files/report_1973/ShortReport-1973.html [<https://perma.cc/X4YF-ZAB7>].

³⁸² *Anxiety Disorders: Facts and Statistics*, Anxiety & Depression Ass’n Am., <https://adaa.org/understanding-anxiety/facts-statistics> [<https://perma.cc/EBF6-CXBF>] (last visited June 26, 2023).

³⁸³ *Id.*

³⁸⁴ *Mental Health By the Numbers*, Nat’l All. Mental Health (June 2022), <https://www.nami.org/mhstats> [<https://perma.cc/DNB4-SA2R>] (citing *2018-2019 National Survey of Children’s Health*, Data Res. Ctr. Child & Adolescent Health, Child and Adolescent

303. Schools are struggling not only to provide students with mental health services but also to deliver an adequate education because of the youth mental health crisis. Students in grades 6–12 identify depression, stress, and anxiety as the most prevalent obstacles to learning.³⁸⁵ Most middle school and high school students also fail to get enough sleep on school nights, which contributes to poor academic performance.³⁸⁶ These negative mental health outcomes are also the most common symptoms of excessive social media use.

304. The youth mental health crisis has also caused a wide range of other behavioral issues among students that interfere with schools' ability to teach. In 2022, 61% of public schools saw an increase in classroom disruptions from student misconduct compared to school years before the pandemic.³⁸⁷ In that same year, 58% of public schools also saw an increase in rowdiness outside of the classroom, 68% saw increases in tardiness, 27% saw increases in students skipping classes, 55% saw increases in the use of electronic devices when not permitted, 37% saw an increase in bullying, 39% saw an increase in physical fights between students, and 46% saw an increase in threats of fights between students.³⁸⁸

305. Further exacerbating school's struggle to teach is the fact students are not showing up to school. Indeed, student absenteeism has greatly increased. In the 2021–2022 school year, 39% of public schools experienced an increase in chronic student absenteeism compared to the 2020–2021 school year, and 72% of public schools saw increased chronic

Health Measurement Initiative,

<https://www.childhealthdata.org/browse/survey/results?q=7839&r=1&g=812>

[<https://perma.cc/Y5ZQ-4XQN>] (last visited Apr. 19, 2023)); and Véronique Dupère *et al.*,

Revisiting the Link Between Depression Symptoms and High School Dropout: Timing of Exposure Matters, J. Adolescent Health 62 (2018) 2015–211 (Sept. 24, 2017),

[https://www.jahonline.org/article/S1054-139X\(17\)30491-3/fulltext](https://www.jahonline.org/article/S1054-139X(17)30491-3/fulltext)

[<https://doi.org/10.1016/j.jadohealth.2017.09.024>].

³⁸⁵ *Insights From the Student Experience, Part I: Emotional and Mental Health* at 2–3,

YouthTruth (2022), [https://youthtruthsurvey.org/wp-](https://youthtruthsurvey.org/wp-content/uploads/2022/10/YouthTruth_EMH_102622.pdf)

[content/uploads/2022/10/YouthTruth_EMH_102622.pdf](https://youthtruthsurvey.org/wp-content/uploads/2022/10/YouthTruth_EMH_102622.pdf) [<https://perma.cc/UHV7-RNQ6>].

³⁸⁶ Anne G. Wheaton *et al.*, *Short Sleep Duration Among Middle School and High School Students-United States*, 2015, 67(3) Morbidity & Mortality Wkly. Rpt. 85–90 (Jan. 26, 2018),

<http://dx.doi.org/10.15585/mmwr.mm6703a1> [<https://perma.cc/873Q-D5PC>].

³⁸⁷ 2022 School Pulse Panel, U.S. Dep't Educ., Inst. Educ. Sci. (2022),

<https://ies.ed.gov/schoolsurvey/spp/> [<https://perma.cc/364R-H5U4>].

³⁸⁸ *Id.*

1 student absenteeism compared to school years before the pandemic.³⁸⁹ Following suit, vandalism
2 has increased in 2022, with 36% of public schools reporting increased acts of student vandalism
3 on school property.³⁹⁰

4 306. School districts have borne increased costs and expenses in response to the youth
5 mental health crisis. These costs include:

- 6 a. Hiring additional mental health personnel (41% of public schools added staff to
7 focus on student mental health);³⁹¹
- 8 b. Developing additional mental health resources (46% of public schools created or
9 expanded mental health programs for students, 27% added student classes on
10 social, emotional, and mental health and 25% offered guest speakers for students
11 on mental health);³⁹²
- 12 c. Training teachers to help students with their mental health (56% of public schools
13 offered professional development to teachers on helping students with mental
14 health);³⁹³
- 15 d. Increasing disciplinary services and hiring additional personnel for disciplinary
16 services;
- 17 e. Addressing property damaged as a result of students acting out because of mental,
18 social, and emotional problems Defendants' conduct caused;
- 19 f. Diverting time and resources from instruction activities to notify parents and
20 guardians of students' behavioral issues and attendance;
- 21 g. Investigating and responding to threats made against schools and students over
22 social media;
- 23 h. Updating its student handbook to address use of Defendants' platforms; and
24 i. Updating school policies to address use of Defendants' platforms.

26 ³⁸⁹ *Id.*

27 ³⁹⁰ *Id.*

28 ³⁹¹ *Id.*

³⁹² *Id.*

³⁹³ *Id.*

1 **F. Impact of Social Media Use on Plaintiff**

2 307. Plaintiff Natomas Unified School District is a public school district located just
3 minutes north of downtown Sacramento, California. NUSD serves nearly 12,000 students in
4 grades pre-kindergarten through 12th grade.³⁹⁴ NUSD operates fifteen schools,³⁹⁵ including one
5 dual immersion school, four K–5th grade elementary schools, five K–8th grade schools, one 6th–
6 8th grade middle school, and three 9th–12th grade high schools.³⁹⁶

7 308. NUSD has been directly impacted by the mental health crisis among youth in its
8 community.

9 309. There has been an increase in the proportion of youth in Plaintiff’s community,
10 like youth across California, who report experiencing anxiety, depression, and suicidal ideation.

11 310. Across California, more and more youth are experiencing anxiety, depression, and
12 suicidal ideation. The results of the 2017–2019 *California Healthy Kids Survey* reflect that 30
13 percent of 7th graders, 33 percent of 9th graders, and 37 percent of 11th graders reported feelings
14 of “incapacitating, chronic sadness or hopelessness[.]”³⁹⁷ In all grades, these are the highest rates
15 reported in the past decade.³⁹⁸ Further, 17 percent of 9th graders and 16 percent of 11th graders
16 contemplated suicide over the past twelve months.³⁹⁹ Other reports show that the percentage of
17 children in California ages 3–17 who had anxiety or depression increased by 70 percent from
18 2016 to 2020.⁴⁰⁰ The severity of these increases cannot be understated; a 2020 report shows that
19

20
21 ³⁹⁴ *About Us*, Natomas Unified Sch. Dist., <https://natomasunified.org/about-us/#> (last visited
Nov. 21, 2023).

22 ³⁹⁵ *Id.*

23 ³⁹⁶ *Our Schools*, Natomas Unified Sch. Dist., <https://natomasunified.org/about-our-schools/> (last
visited Nov. 21, 2023).

24 ³⁹⁷ Gregory Austin *et al.*, *California Healthy Kids Survey: School Climate and Student*
25 *Engagement and Well-being in California, 2017/19. Results of the Seventeenth Biennial State*
California Healthy Kids Survey, Grades 7, 9, and 11 at 27, WestEd for Cal. Dep’t Educ.
(2020), https://data.calschls.org/resources/Biennial_State_1719.pdf [[https://perma.cc/YD63-](https://perma.cc/YD63-Z9ZU)
26 [Z9ZU](https://perma.cc/YD63-Z9ZU)].

27 ³⁹⁸ *Id.*

28 ³⁹⁹ *Id.*

⁴⁰⁰ *2022 Kids Count Data Book: State Trends in Child Well-Being* at 7, Annie E. Casey Found.
(2022), <https://assets.aecf.org/m/resourcedoc/aecf-2022kidscountdatabook-2022.pdf>
[<https://perma.cc/G8WQ-QBZC>].

1 mental illness is the primary reason children in California ages birth-to-17 are hospitalized.⁴⁰¹

2 311. These increases in anxiety and depression also impact the number of students
3 attending school, which directly impacts school districts' mission to educate students. The 2017–
4 2019 *California Healthy Kids Survey* reflects that 5 percent of 7th graders, 8 percent of 9th
5 graders and 11 percent of 11th graders reported missing school in the past thirty days because
6 they felt “very sad, hopeless, anxious, stressed, or angry.”⁴⁰²

7 312. Sacramento County, where Plaintiff is located, maintains similar numbers. In
8 2019–2021, 32 percent of 7th graders, 40 percent of 9th graders, and 46 percent of 11th graders
9 reported experiencing chronic sad or hopeless feelings during the past twelve months.⁴⁰³
10 Additionally, 14 percent of 7th graders, 19 percent of 9th graders, and 19 percent of 11th graders
11 seriously considered attempting suicide during the past twelve months.⁴⁰⁴

12 313. The county-level *California Healthy Kids Survey* results corroborate the district-
13 level results from Covitality, a social-emotional survey Plaintiff administers to its students in
14 grades 4th–12th to identify students in psychological distress. Of Plaintiff's students who
15 completed the survey in Fall 2023, almost 19 percent fell into the top three risk categories (i.e.,
16 vulnerable, moderate risk, and high risk).

17 314. Plaintiff's students' mental, emotional, and social health has declined as students'
18 use of Defendants' platforms has increased, both in frequency and intensity. Plaintiff's
19 administrators and teachers alike have noted that social media use among Plaintiff's students is
20 ubiquitous and a huge distraction from learning. Plaintiff's students access social media during
21 class time, between classes, and during lunch.

23 ⁴⁰¹ 2020 *California Children's Report Card* at 15, Child. Now (2020),
24 <https://files.eric.ed.gov/fulltext/ED603021.pdf> [<https://perma.cc/N74E-QY4V>].

25 ⁴⁰² Gregory Austin et al., *California Healthy Kids Survey: School Climate and Student*
26 *Engagement and Well-being in California, 2017/19. Results of the Seventeenth Biennial State*
27 *California Healthy Kids Survey, Grades 7, 9, and 11* at 27, WestEd for Cal. Dep't Educ.
(2020), https://data.calschls.org/resources/Biennial_State_1719.pdf [<https://perma.cc/YD63-Z9ZU>].

28 ⁴⁰³ *California Health Kids Survey, Sacramento County Secondary 2019–2021 Main Report* at 31,
WestEd for Cal. Dep't Educ. (Aug. 12, 2022),
https://data.calschls.org/resources/Sacramento_County_1921_Sec_CHKS.pdf.

⁴⁰⁴ *Id.*

1 315. In lockstep with these increases in anxiety, depression, and suicidal ideation,
2 student behavior problems have also increased in Plaintiff's schools, including disciplinary
3 incidents tied to social media. During the 2016–2017 school year, for example, 214 incidents
4 involving cell phones were entered into Plaintiff's disciplinary system. There were almost double
5 that number of incidents during the 2022–2023 school year, and students are already on a pace to
6 eclipse that number for the 2023–2024 school year. And these are only the incidents rising to the
7 level of formal discipline; not captured in this data, for example, are all the times teachers took
8 time from teaching to stop a student from using social media during classroom instruction.

9 316. While Plaintiff's schools and its staff must deal with increased behavioral issues
10 on the one hand, they must deal with increased absenteeism on the other. And even when
11 Plaintiff's students attend school, there is still a significant amount of lost instructional time. For
12 example, administrators have seen an increasing number of students leaving class to go to the
13 bathroom where they go to access social media.

14 317. The ongoing increase in time youth spend on Defendants' platforms has
15 intensified the youth mental health crisis and the behavioral issues Plaintiff's students are
16 experiencing.

17 318. The current youth mental health crisis has led to a marked increase in the number
18 of Plaintiff's students in crisis, acting out, and in need of mental health services, an increase that
19 far outpaced the increase in student enrollment. During the 2013–2014 school year, Plaintiff
20 estimates that it provided mental health services to just 3 percent of its enrolled students. This
21 past school year (2022–2023), Plaintiff estimates it provided mental health services to 20 percent
22 of its enrolled students.

23 319. This increase has adversely impacted the educational experience for staff,
24 teachers, students, and their families. Staff and teachers cannot ignore students who are in crisis
25 and need to support those students, even if this comes at the expense of the educational goals and
26 experience for the larger student body. School campuses are public spaces, and classes and
27 activities are communal experiences. Increases in anxiety, depression, suicidal ideation, and
28 other mental health crises impact both the students suffering from these problems and the other

1 students, teachers, and staff who need to interact with these students.

2 320. The pernicious effects of Defendants' platforms are inescapable and have
3 fundamentally changed the learning and teaching environment at Plaintiff's schools.

4 321. In an attempt to address the decline in students' mental, emotional, and social
5 health, Plaintiff has been forced to divert resources and expend additional resources to:

6 a. hire additional personnel, including counselors, school psychologists, and social
7 workers to address mental, emotional, and social health issues;

8 b. re-direct resources to address mental, emotional, and social health issues;

9 c. increase training for teachers and staff to identify students exhibiting symptoms
10 affecting their mental, emotional, and social health;

11 d. educate teachers, staff, and members of the community about the harms caused by
12 Defendants' wrongful conduct;

13 e. develop lesson plans to teach students about the dangers of using Defendants'
14 platforms;

15 f. educate students and parents about the dangers of using Defendants' platforms;

16 g. update its student handbook to address use of Defendants' platforms; and

17 h. update school policies to address use of Defendants' platforms.

18 322. Additionally, more students have been acting out as a result of the decline
19 Defendants caused in students' mental, emotional, and social health. Consequently, Plaintiff has
20 been forced to divert resources and expend additional resources to:

21 a. repair property damaged as a result of the exploitive and harmful content
22 Defendants directed to students;

23 b. increase disciplinary services;

24 c. confiscate devices Defendants' conduct compelled students to use to access
25 Defendants' platforms while in class or on school campus;

26 d. meet with students and the parents of students caught using Defendants' platforms
27 at school; and

28 e. divert time and resources from instructional activities to notify parents and

guardians of students' behavioral issues and attendance.

323. In response to the increased number of students experiencing mental health challenges, Plaintiff has hired additional staff. During the 2012–2013 school year, Plaintiff employed six counselors and eleven school psychologists to work with students struggling with mental health issues. Over the past decade, Plaintiff has been forced to hire additional counselors, school psychologists, and social workers. As of the 2023–2024 school year, Plaintiff employs eighty-four staff members specifically trained in providing social-emotional and/or behavior supports for a ratio of one such staff member for every 153 students and at least one school psychologist and social worker at each of its campuses. In total, Plaintiff employs seventeen school psychologists, fifteen school counselors, fifteen social workers, six social-emotional support (“SES”) teachers, twelve SES instructional assistants, three behavior specialists, five behavior technicians, two school psychologist interns, and nine social worker interns. In addition, all administrators, teachers, and instructional assistants at NUSD play a role in providing social-emotional support to students.

324. NUSD staff offer mental health services directly to Plaintiff’s students. These services include suicide risk assessments, group counseling, tier II targeted classroom groups, individual counseling, and consultative services to facilitate student learning and development. Additionally, NUSD staff assist students and their families in accessing mental health services from community service providers. Below is a chart reflecting some of the changes in NUSD’s mental health services over the past decade:

1 **V. SECTION 230 IS NO SHIELD FOR DEFENDANTS’ CONDUCT**

2 329. Plaintiff anticipates that Defendants will raise section 230 of the Communications
3 Decency Act, 47 U.S.C. § 230(c)(1), as a shield for their conduct. But section 230 is no shield for
4 Defendants’ own acts in designing, marketing, and operating social media platforms that are
5 harmful to youth.

6 330. Section 230 provides immunity from liability only to “(1) a provider or user of an
7 interactive computer service (2) whom a plaintiff seeks to treat, under a state law cause of action,
8 as a publisher or speaker (3) of information provided by another information content provider.”
9 *Barnes v. Yahoo!, Inc.*, 570 F.3d 1096, 1100–01 (9th Cir. 2009), *as amended* (Sept. 28, 2009).

10 331. Publication generally involves traditional editorial functions, such as reviewing,
11 editing, and deciding whether to publish or to withdraw from publication third-party content.
12 *Lemmon v. Snap, Inc.*, 995 F.3d 1085, 1091 (9th Cir. 2021).

13 332. Publication does not, however, include duties related to designing and marketing
14 a social media platform. *See id.* at 1092–93.

15 333. Plaintiff expressly disavows any claims or allegations that attempt to hold
16 Defendants liable as the publisher or speaker of any information provided by third parties.

17 334. Section 230 does not shield Defendants’ conduct because, among other
18 considerations: (1) Defendants are liable for their own affirmative conduct in recommending and
19 promoting harmful content to youth; (2) Defendants are liable for their own actions designing
20 and marketing their social media platforms in a way that causes harm; (3) Defendants are liable
21 for the content they create that causes harm; and (4) Defendants are liable for distributing,
22 delivering, and/or transmitting material that they know or have reason to know is harmful,
23 unlawful, and/or tortious.

24 335. First, Plaintiff is not alleging Defendants are liable for what third parties have said
25 on Defendants’ platforms but, rather, for Defendants’ own conduct. As described above,
26 Defendants affirmatively recommend and promote harmful content to youth, such as pro-
27 anorexia and eating disorder content. Recommendation and promotion of damaging material is
28 not a traditional editorial function and seeking to hold Defendants liable for these actions is not

1 seeking to hold them liable as a publisher or speaker of third party-content.

2 336. Second, Plaintiff's claims arise from Defendants' status as designers and
3 marketers of dangerous social media platforms that have injured the health, comfort, and repose
4 of its community. The nature of Defendants' platforms centers around Defendants' use of
5 algorithms and other designs features that encourage users to spend the maximum amount of
6 time on their platforms—not on particular third-party content. The algorithms Defendants
7 employ adapt to the social media activity of individual users to promote whatever content will
8 trigger a particular user's attention and maximize their screen time. That is, Defendants'
9 algorithms are user-focused rather than content-based and are indifferent to the nature and type
10 of content they promote to users, provided that such content increases the time users spend on
11 their platforms. In that respect, they are content neutral.

12 337. Third, Defendants are liable for the content they create. In addition to content
13 such as Snapchat filters which promote body dysmorphia, Defendants send emails and
14 notifications to youth including material they create which often promotes certain harmful
15 content.

16 338. Fourth, Plaintiff does not seek to hold Defendants liable as publishers or speakers
17 of information provided by other content providers, but instead Plaintiff seeks to hold them liable
18 for distributing material they know or should know is harmful or unlawful. *See Malwarebytes,*
19 *Inc. v. Enigma Software Grp. USA, LLC*, 141 S. Ct. 13 (2020) (statement of Justice Thomas
20 respecting denial of certiorari discussing the distinction between distributor and publisher
21 liability); *cf. Restatement (Second) of Torts* § 581 (Am. Law Inst. 1977) (“[O]ne who only
22 delivers or transmits defamatory matter published by a third person is subject to liability if, but
23 only if, he knows or has reason to know of its defamatory character.”).

24 339. Ultimately, Plaintiff's claim is not predicated on information provided by another
25 information content provider. Rather, Plaintiff's claim rests on Defendants' conduct which has
26 resulted in the current public health crisis among youth mental health.

1 **VI. CAUSES OF ACTION**

2 **COUNT ONE — PUBLIC NUISANCE**

3 340. Plaintiff incorporates by reference all preceding paragraphs.

4 341. Plaintiff brings this claim under California public nuisance law as to all
5 Defendants.

6 342. Under California law, “anything which is injurious to health...or is indecent or
7 offensive to the senses, or an obstruction to the free use of property, so as to interfere with the
8 comfortable enjoyment of life or property...is a nuisance.”⁴⁰⁶ “A public nuisance is one which
9 affects at the same time an entire community or neighborhood, or any considerable number of
10 persons, although the extent of the annoyance or damage inflicted upon individuals may be
11 unequal.”⁴⁰⁷

12 343. Defendants have created a mental health crisis in Plaintiff’s schools, injuring the
13 public health and safety in Plaintiff’s community and interfering with the operations, use, and
14 enjoyment of the property of NUSD.

15 344. Defendants, by designing, developing, marketing, supplying, promoting,
16 advertising, operating, and distributing their respective social media platforms for use by
17 students in Plaintiff’s Schools in the manner described above, have engaged in conduct that
18 substantially interferes with the health and safety of the students of NUSD, substantially
19 interferes with the functions and operations of NUSD schools, and harms the health, safety, and
20 welfare of the NUSD community.

21 345. Each Defendant has created or assisted in the creation of a condition that is
22 injurious to the health, safety, and welfare of the NUSD community and interferes with the
23 educational environment for students, teachers, and administrators in Plaintiff’s schools.
24 Defendants have each created or assisted in the creation of a condition that significantly disrupts
25 the daily operations and functioning of Plaintiff’s schools.

26 346. The health and safety of the students and employees of NUSD, including those
27

28 ⁴⁰⁶ Cal. Civ. Code § 3479.

⁴⁰⁷ Cal. Civ. Code § 3480.

1 who use, have used, or will use Defendants' platforms, as well as those affected by others' use of
2 their platforms, are matters of substantial public interest and of legitimate concern to Plaintiff.

3 347. Defendants' conduct has affected and continues to affect a substantial number of
4 people within Plaintiff's community and is likely to continue causing significant harm.

5 348. Defendants' conduct is ongoing and continues to produce permanent and long-
6 lasting damage.

7 349. Defendants' conduct substantially and unreasonably interferes with public health,
8 safety, and the right to a public education in a safe and healthy environment. In that regard, and
9 in other ways discussed herein, the public nuisance created or maintained by Defendants was
10 connected to Plaintiff's property, including but not limited to school buildings.

11 350. This harm to youth mental health and the corresponding impacts to public health,
12 safety, and the welfare of Plaintiff's community outweighs any social utility of Defendants'
13 wrongful conduct.

14 351. The rights, interests, and inconvenience to Plaintiff's community far outweighs
15 the rights, interests, and inconvenience to Defendants, who have profited tremendously from
16 their wrongful conduct.

17 352. But for Defendants' actions, Plaintiff's students would not use social media
18 platforms as frequently or long as they do today, be deluged with exploitive and harmful content
19 to the same degree, and the public health crisis that currently exists as a result of Defendants'
20 conduct would have been averted.

21 353. Logic, common sense, justice, policy, and precedent indicate Defendants' unfair
22 and deceptive conduct has caused the damage and harm complained of herein. Defendants knew
23 or reasonably should have known that their design, development, marketing, supply, promotion,
24 advertisement, operation, and distribution of their platforms would cause students to use their
25 platforms excessively, that their marketing methods were designed to appeal to youth, and that
26 their active efforts to increase youth use of their platforms were causing harm to youth and to
27 schools, including youth who attend Plaintiff's schools.

28 354. Thus, the public nuisance caused by Defendants was reasonably foreseeable,

1 including the financial and economic losses incurred by Plaintiff.

2 355. Alternatively, Defendants’ conduct was a substantial factor in bringing about the
3 public nuisance even if a similar result would have occurred without it. By designing,
4 developing, marketing, supplying, promoting, advertising, operating, and distributing their
5 platforms in a manner intended to maximize the time youth spend on their respective
6 platforms—despite knowledge of the harms to youth from their wrongful conduct—Defendants
7 directly facilitated the widespread, excessive, and habitual use of their platforms and the public
8 nuisance affecting Plaintiff. By seeking to capitalize on their success by refining their platforms
9 to increase the time youth spend on their platforms, Defendants directly contributed to the public
10 health crisis and the public nuisance affecting Plaintiff.

11 356. Defendants’ conduct is especially injurious to Plaintiff because, as a direct and
12 proximate cause of Defendants’ conduct creating or assisting in the creation of a public nuisance,
13 the educational environment within Plaintiff’s schools has been and will continue to be
14 substantially harmed.

15 357. Plaintiff has had to take steps to mitigate the harm and disruption caused by
16 Defendants’ conduct, including the following:

- 17 a. Hiring additional personnel to address mental, emotional, and social health issues;
- 18 b. Developing additional resources to address mental, emotional, and social health
19 issues;
- 20 c. Increasing training for teachers and staff to identify students exhibiting symptoms
21 affecting their mental, emotional, and social health;
- 22 d. Training teachers, staff, and members of the community about the harms caused
23 by Defendants’ wrongful conduct;
- 24 e. Developing lesson plans to teach students about the dangers of using Defendants’
25 platforms;
- 26 f. Educating students and parents about the dangers of using Defendants’ platforms;
- 27 g. Addressing property damaged as a result of students acting out because of mental,
28 social, and emotional problems Defendants’ conduct is causing;

- h. Increasing disciplinary services;
- i. Confiscating devices on which students use Defendants' platforms while in class or on Plaintiff's school campuses;
- j. Meeting with students and the parents of students caught using Defendants' platforms at school or other disciplinary matters related to students' use of Defendants' platforms;
- k. Diverting time and resources from instruction activities to notify parents and guardians of students' behavioral issues and attendance;
- l. Updating its student handbook to address use of Defendants' platforms; and
- m. Updating school policies to address use of Defendants' platforms.

358. Fully abating the nuisance resulting from Defendants' conduct will require much more than these steps.

359. As detailed herein, Plaintiff has suffered special damage different in kind or quality from that suffered by the public in common. The damages suffered by Plaintiff have been greater in degree and different in kind than those suffered by the general public including, but not limited to, costs arising from: expending, diverting, and increasing personnel to provide mental health services; expending, diverting, and increasing resources to address mental health issues; expending, diverting, and increasing staff time to confiscate cell phones and other devices; expending, diverting, and increasing staff time to communicate and engage with parents; expending, diverting, and increasing staff time associated with student discipline; expending, diverting, and increasing staff time associated with routing students to counselors; expending, diverting, and increasing staff time to train staff to identify students exhibiting symptoms affecting their mental health; expending, diverting, and increasing resources for modifications to mental health curriculum; and expending, diverting, and increasing resources to repair property damages as a result of the exploitive and harmful content Defendants directed to students.

360. As a result of Defendant's conduct, Plaintiff has incurred damages and is entitled to compensation therefor. Plaintiff requests all the relief to which it is entitled in its own right and relating to the special damage or injury it has suffered, including actual and compensatory

1 damages in an amount to be determined at trial and an order providing for the abatement of the
2 public nuisance that Defendants have created or assisted in the creation of, and enjoining
3 Defendants from future conduct contributing to the public nuisance described above. Plaintiff's
4 claim is not brought in any representative or *parens patriae* capacity on behalf of students.

5 361. Defendants engaged in conduct, as described above, that constituted malice and/or
6 intentional, wanton, willful, or reckless disregard of Plaintiff's rights, being fully aware of the
7 probable dangerous consequences of the conduct and deliberately failing to avoid those
8 consequences.

9 362. Defendants' conduct, as described above, was intended to serve their own
10 interests despite having reason to know and consciously disregarding a substantial risk that their
11 conduct might significantly injure the rights of others, including Plaintiff, and/or Defendants
12 consciously pursued a course of conduct knowing that it created a substantial risk of significant
13 harm to others, including Plaintiff. Defendants regularly risk the health of consumers and users
14 of their platforms with full knowledge of the dangers of their platforms. Defendants consciously
15 decided not to redesign, warn, or inform the unsuspecting public, including Plaintiff's students or
16 Plaintiff. Defendants' willful, knowing, and reckless conduct therefore warrants an award of
17 aggravated or punitive damages.

18 363. Defendants are jointly and severally liable because the harms resulting from their
19 acts are indivisible.

20 **COUNT TWO — NEGLIGENCE**

21 364. Plaintiff incorporates by reference all preceding paragraphs.

22 365. Defendants owed Plaintiff a duty to not expose Plaintiff to an unreasonable risk of
23 harm, and to act with reasonable care as a reasonably careful person and/or company would act
24 under the circumstances.

25 366. At all times relevant to this litigation, Defendants owed a duty to consumers and
26 the general public, including Plaintiff, to exercise reasonable care in the design, research,
27 development, testing, marketing, supply, promotion, advertisement, operation, and distribution of
28 Defendants social media platforms, including the duty to take all reasonable steps necessary to

1 design, research , market, advertise, promote, operate, and/or distribute their platforms in a way
2 that is not unreasonably dangerous to consumers users, including youth.

3 367. At all times relevant to this litigation, Defendants owed a duty to consumers and
4 the general public, including Plaintiff, to exercise reasonable care in the design, research,
5 development, testing, marketing, supply, promotion, advertisement, operation, and distribution of
6 their social media platforms, including the duty to provide accurate, true, and correct information
7 about the risks of using Defendants' platforms; and appropriate, complete, and accurate warnings
8 about the potential adverse effects of extended social media use, in particular, social media
9 content Defendants directed via their algorithms to users, including youth.

10 368. At all times relevant to this litigation, Defendants knew or, in the exercise of
11 reasonable care, should have known of the hazards and dangers of their respective social media
12 platforms and specifically, the health hazards their platforms posed to youth in particular,
13 especially extended or problematic use of such platforms.

14 369. Accordingly, at all times relevant to this litigation, Defendants knew or, in the
15 exercise of reasonable care, should have known that use of Defendants' social media platforms
16 by youth could cause Plaintiff's injuries and thus created a dangerous and unreasonable risk of
17 injury to Plaintiff.

18 370. Defendants also knew or, in the exercise of reasonable care, should have known
19 that users and consumers of Defendants' social media platforms were unaware of the risks and
20 the magnitude of the risks associated with the use of Defendants' platforms including but not
21 limited to the risks of extended or problematic social media use and the likelihood that
22 algorithm-based recommendations would expose child and adolescent users to content that is
23 violent, sexual, or encourages self-harm, among other types of harmful content.

24 371. As such, Defendants, by action and inaction, representation and omission,
25 breached their duty of reasonable care, failed to exercise ordinary care, and failed to act as a
26 reasonably careful person and/or company would act under the circumstances in the design,
27 research, development, testing, marketing, supply, promotion, advertisement, operation, and
28 distribution of their social media platforms, in that Defendants designed, researched, developed,

1 tested, marketed, supplied, promoted, advertised, operated, and distributed social media
2 platforms that Defendants knew or had reason to know would negatively impact the mental
3 health of consumers, particularly youth, and failed to prevent or adequately warn of these risks
4 and injuries.

5 372. Despite their ability and means to investigate, study, and test their social media
6 platforms and to provide adequate warnings, Defendants have failed to do so. Defendants have
7 wrongfully concealed information and have made false and/or misleading statements concerning
8 the safety and use of Defendants' social media platforms.

9 373. Defendants' negligence includes:

10 a. Designing, researching, developing, marketing, supplying, promoting,
11 advertising, operating, and distributing their social media platforms without thorough and
12 adequate pre- and post-market testing; design, research, development, testing, marketing, supply,
13 promotion, advertisement, operation, and distribution

14 b. Failing to sufficiently study and conduct necessary tests to determine whether or
15 not their social media platforms were safe for youth users;

16 c. Failing to use reasonable and prudent care in the research, design, development,
17 testing, marketing, supply, promotion, advertisement, operation, and distribution of their social
18 media platforms so as to avoid the risk encouraging extended social media use;

19 d. Designing their social media platforms to maximize the amount of time users
20 spend on the platform and causing excessive and problematic use of their platforms, particularly
21 among youth, through the use of algorithm-based feeds, social reciprocity, and IVR;

22 e. Failing to implement adequate safeguards in the design and operation of their
23 platforms to ensure they would not encourage excessive and problematic use of their platforms;

24 f. Designing and manufacturing their platforms to appeal to minors and young
25 people who lack the same cognitive development as adults and are particularly vulnerable to
26 social rewards like IVR and social reciprocity;

27 g. Failing to take adequate steps to prevent their platforms from being promoted,
28 distributed, and used by minors under the age of 13;

1 h. Failing to provide adequate warnings to child and adolescent users or parents who
2 Defendants could reasonably foresee would use their platforms;

3 i. Failing to disclose to, or warn, Plaintiff, users, consumers, and the general public
4 of the negative mental health consequences associated with social media use, especially for
5 children and adolescents;

6 j. Failing to disclose to Plaintiff, users, consumers, and the general public that
7 Defendants' platforms are designed to maximize the time users, particularly youth, spend on
8 Defendants' platforms and cause negative mental health consequences;

9 k. Representing that Defendants' platforms were safe for child and adolescent users
10 when, in fact, Defendants knew or should have known that the platforms presented acute mental
11 health concerns for young users;

12 l. Failing to alert users and the general public, including students at Plaintiff's
13 schools of the true risks of using Defendants' platforms;

14 m. Advertising, marketing; and recommending Defendants' platforms while
15 concealing and failing to disclose or warn of the dangers known by Defendants to be associated
16 with, or caused by, youth use of Defendants' platforms;

17 n. Continuing to design, research, develop, market, supply, promote, advertise,
18 operate, and distribute Defendants' platforms with knowledge that Defendants' platforms are
19 unreasonably unsafe, addictive, and dangerous to youth mental health;

20 o. Failing to modify Defendants' algorithms, which are used to recommend content
21 to users, in a manner that would no longer prioritize maximizing the amount of time users spend
22 on Defendants' platforms over the safety of its youth users;

23 p. Failing to adequately modify Defendants' algorithm-based recommendations to
24 filter out content that expose child and adolescent users to content that is violent, sexual, or
25 encourages self-harm, among other types of harmful content.

26 q. Committing other failures, acts, and omissions set forth herein.

27 374. Defendants knew or should have known that it was foreseeable that Plaintiff
28 would suffer injuries as a result of Defendants' failure to exercise reasonable care in designing,

researching, developing, testing, marketing, supplying, promoting, advertising, operating, and distributing Defendants' platforms, particularly when Defendants' platforms were designed, developed, operated and marketed to maximize the time youth spend on Defendants' platforms.

375. Defendants could have reasonably foreseen the probable harm caused by their negligence. Each Defendant's acts and omissions were a substantial factor in causing harm to Plaintiff.

376. Plaintiff did not know the nature and extent of the injuries that could result from the intended use of Defendants' social media platforms by Plaintiff's students.

377. Defendants' negligence helped to and did produce, and was the proximate cause of, the injuries, harm, and economic losses that Plaintiff suffered and will continue to suffer, and such injuries, harm, and economic losses would not have happened without Defendants' negligence as described herein.

378. The mental health crisis caused and/or significantly contributed to by Defendants has caused an ongoing behavioral disruption in Plaintiff's schools, and Plaintiff has had to take steps to mitigate the harm and disruption caused by Defendants' conduct, including the following:

- a. Hiring additional personnel to address mental, emotional, and social health issues;
- b. Developing additional resources to address mental, emotional, and social health issues;
- c. Increasing training for teachers and staff to identify students manifesting mental, emotional, and social health issues;
- d. Training teachers, staff, and members of the community about the harms caused by Defendants' wrongful conduct;
- e. Developing lesson plans to teach students about the dangers of using Defendants' platforms;
- f. Educating students and parents about the dangers of using Defendants' platforms;
- g. Addressing property damaged as a result of students acting out because of mental, social, and emotional problems Defendants' conduct is causing;

- 1 h. Increasing disciplinary services;
- 2 i. Confiscating devices on which students use Defendants' platforms while in class
- 3 or on Plaintiff's school campuses;
- 4 j. Meeting with students and the parents of students caught using Defendants'
- 5 platforms at school or other disciplinary matters related to students' use of Defendants'
- 6 platforms;
- 7 k. Diverting time and resources from instruction activities to notify parents and
- 8 guardians of students' behavioral issues and attendance;
- 9 l. Updating its student handbook to address use of Defendants' platforms; and
- 10 m. Updating school policies to address use of Defendants' platforms.

11 379. Defendants' conduct, as described above, was intended to serve their own
12 interests despite having reason to know and consciously disregarding a substantial risk that their
13 conduct might significantly injure the rights of others, including Plaintiff, and/or Defendants
14 consciously pursued a course of conduct knowing that it created a substantial risk of significant
15 harm to others, including Plaintiff. Defendants regularly risk the health of consumers and users
16 of their platforms with full knowledge of the dangers of their platforms. Defendants consciously
17 decided not to redesign, warn, or inform the unsuspecting public, including Plaintiff's students or
18 Plaintiff. Defendants' willful, knowing, and reckless conduct therefore warrants an award of
19 aggravated or punitive damages.

20 **COUNT THREE — GROSS NEGLIGENCE**

21 380. Plaintiff incorporates by reference all preceding paragraphs.

22 381. Defendants owed Plaintiff a duty to not expose Plaintiff to an unreasonable risk of
23 harm, and to act with reasonable care as a reasonably careful person and/or company would act
24 under the circumstances.

25 382. Defendants owed a duty to users and the general public, including Plaintiff, to
26 exercise reasonable care in the design, research, development, testing, marketing, supply,
27 promotion, advertisement, operation, and distribution of Defendants social media platforms,
28 including the duty to take all reasonable steps necessary to design, research, market, advertise,

1 promote, operate, and/or distribute their platforms in a way that is not unreasonably dangerous to
2 users, including children.

3 383. Defendants owed a duty to users and the general public, including Plaintiff, to
4 exercise reasonable care in the design, research, development, testing, marketing, supply,
5 promotion, advertisement, operation, and distribution of their social media platforms, including
6 the duty to provide accurate, true, and correct information about the risks of using Defendants'
7 platforms; and appropriate, complete, and accurate warnings about the potential adverse effects
8 of extended social media use, in particular, social media content Defendants directed via their
9 algorithms to users.

10 384. Defendants knew or, in the exercise of reasonable care, should have known of the
11 hazards and dangers of their respective social media platforms and specifically, the health
12 hazards their platforms posed to youth in particular, especially extended or problematic use of
13 such platforms.

14 385. Defendants' platforms were the of the type that could endanger others,
15 particularly youth, if negligently made, promoted, or distributed. Defendants knew the risks that
16 young people would be attracted to their platforms yet unable to appropriately limit their use of
17 Defendants platforms because of their still-developing brains. Further, Defendants knew the risks
18 their platforms posed to youth, especially extended or problematic use of such platforms.

19 386. Defendants were grossly negligent in designing, researching, developing, testing,
20 marketing, supplying, promoting, advertising, operating, and distributing their social media
21 platforms.

22 387. As widely used platforms backed by powerful algorithms designed to maximize
23 the amount of time users spend on the platform, Defendants knew or should have known their
24 platforms needed to be designed, researched, developed, tested, marketed, supplying, promoted,
25 advertised, operated, and distributed with due care to avoid causing needless harm. Defendants
26 knew or should have known their products could cause serious risk of harm, particularly to
27 young persons like students in Plaintiff's schools.

28 388. Defendants engaged in gross, willful, and/or wanton conduct that lacked any care

1 and amounted to an extreme departure from what a reasonably careful person would do in the
2 same situation to prevent harm to others. Defendants' willful and wanton conduct caused
3 Plaintiff to suffer harm.

4 389. The gross, willful, and wanton conduct of Defendants includes, but is not limited
5 to, the following:

6 a. Designing researching, developing, marketing, supplying, promoting, advertising,
7 operating, and distributing their social media platforms without thorough and adequate pre- and
8 post-market testing; design, research, development, testing, marketing, supply, promotion,
9 advertisement, operation, and distribution;

10 b. Failing to sufficiently study and conduct necessary tests to determine whether or
11 not their social media platforms were safe for youth users;

12 c. Failing to use reasonable and prudent care in the research, design, development,
13 testing, marketing, supply, promotion, advertisement, operation, and distribution of their social
14 media platforms so as to avoid the risk encouraging extended social media use;

15 d. Designing their social media platforms to maximize the amount of time users
16 spend on the platform and causing excessive and problematic use of their platforms, particularly
17 among youth, through the use of algorithm-based feeds, social reciprocity, and IVR;

18 e. Failing to implement adequate safeguards in the design and operation of their
19 platforms to ensure they would not encourage excessive and problematic use of their platforms;

20 f. Designing and manufacturing their platforms to appeal to minors and young
21 people who lack the same cognitive development as adults and are particularly vulnerable to
22 social rewards like IVR and social reciprocity;

23 g. Failing to take adequate steps to prevent their platforms from being promoted,
24 distributed, and used by minors under the age of 13;

25 h. Failing to provide adequate warnings to child and adolescent users or parents who
26 Defendants could reasonably foresee would use their platforms;

27 i. Failing to disclose to, or warn, Plaintiff, users, and the general public of the
28 negative mental health consequences associated with social media use, especially for children

1 and adolescents;

2 j. Failing to disclose to Plaintiff, users, and the general public that Defendants'
3 platforms are designed to maximize the time users, particularly youth, spend on Defendants'
4 platforms and cause negative mental health consequences;

5 k. Representing that Defendants' platforms were safe for child and adolescent users
6 when, in fact, Defendants knew or should have known that the platforms presented acute mental
7 health concerns for young users;

8 l. Failing to alert users and the general public, including students at Plaintiff's
9 schools of the true risks of using Defendants' platforms;

10 m. Advertising marketing; and recommending Defendants' platforms while
11 concealing and failing to disclose or warn of the dangers known by Defendants to be associated
12 with, or caused by, youth use of Defendants' platforms;

13 n. Continuing to design, research, develop, market, supply, promote, advertise,
14 operate, and distribute Defendants' platforms with knowledge that Defendants' platforms are
15 unreasonably unsafe, addictive, and dangerous to youth mental health;

16 o. Failing to modify Defendants' algorithms, which are used to recommend content
17 to users, in a manner that would no longer prioritize maximizing the amount of time users spend
18 on Defendants' platforms over the safety of its youth users;

19 p. Failing to adequately modify Defendants' algorithm-based recommendations to
20 filter out content that expose child and adolescent users to content that is violent, sexual, or
21 encourages self-harm, among other types of harmful content; and

22 q. Committing other failures, acts, and omissions set forth herein.

23 390. Defendants breached the duties they owed to Plaintiff and in doing so were
24 wholly unreasonable.

25 391. Defendants breached their duties through their false and misleading statements
26 and omissions in the course of designing, manufacturing, distributing, and marketing their social
27 media platforms.

28 392. As a foreseeable consequence of Defendants' breaches of their duties, Plaintiff

has suffered and will continue to suffer direct and consequential economic and other injuries as a result of dealing with the youth mental health crisis in Plaintiff's school, as described herein.

393. Defendants engaged in conduct, as described above, that constituted malic, oppression, or fraud, with intent to cause injury and/or with willful and knowing disregard of the rights or safety of another, being fully aware of the probable dangerous consequences of the conduct and deliberate failing to avoid those consequences.

394. Defendants regularly risk the health and lives of users of its platforms with full knowledge of the dangers of its platforms. Defendants made conscious decisions not to redesign, warn, or inform the unsuspecting public, including Plaintiff and Plaintiff's students. Defendants' willful, knowing, and reckless conduct therefore warrants an award of aggravated or punitive damages.

VII. PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for judgment as follows:

395. Entering an Order that the conduct alleged herein constitutes a public nuisance under California law;

396. Entering an Order that Defendants are jointly and severally liable;

397. Entering an Order requiring Defendants to abate the public nuisance described herein and to deter and/or prevent the resumption of such nuisance;

398. Enjoining Defendants from engaging in further actions causing or contributing to the public nuisance as described herein;

399. Awarding equitable relief to fund prevention education and treatment for excessive and problematic use of social media;

400. Awarding actual, compensatory, and punitive damages;

401. Awarding statutory damages in the maximum amount permitted by law;

402. Awarding reasonable attorneys' fees and costs of suit;

403. Awarding pre-judgment and post-judgment interest; and

404. Such other and further relief as the Court deems just and proper under the circumstances.

VIII. JURY TRIAL DEMAND

405. Plaintiff hereby demands a trial by jury.

RESPECTFULLY SUBMITTED this 28th day of December, 2023.

KELLER ROHRBACK L.L.P.

By 

Dean N. Kawamoto (SBN 232032)
Gretchen Freeman Cappio
Cari C. Laufenberg
Derek W. Loeser
Garrett A. Heilman
Felicia J. Craick
Chris N. Ryder
1201 Third Avenue, Suite 3200
Seattle, WA 98101
Telephone: 206.623.1900
Facsimile: 206.623.3384
Email: dkawamoto@kellerrohrback.com
gcappio@kellerrohrback.com
claufenberg@kellerrohrback.com
dloeser@kellerrohrback.com
gheilman@kellerrohrback.com
fcraick@kellerrohrback.com
cryder@kellerrohrback.com

Chris Springer
801 Garden Street, Suite 301
Santa Barbara, CA 93101
Telephone: 805.456.1496
Facsimile: 805.456.1497
Email: cspringer@kellerrohrback.com

Attorneys for Plaintiff