

**A.C.T.** AMERICAN  
CONSERVATORY  
THEATER

THIS IS YOUR THEATER,  
SAN FRANCISCO

**23**  
**24** SEASON  
SEASON 57

**A WORLD PREMIERE**

**BIG  
DATA**

**RESOURCE AND  
ACTIVITY GUIDE**

**BY KATE ATTWELL**

**DIRECTED BY PAM MACKINNON**

**A.C.T.'S ARTISTIC DIRECTOR AND TONY AWARD WINNER**

# WELCOME!

American Conservatory Theater's Education & Community Programs Department is delighted to welcome you into the dynamic, boisterous and thought-provoking world of *Big Data*. This guide was created in February 2024 by Natalie Greene with Lauren Tannous, and designed by Dani Karonis. Special thanks to Robert Ayala for being a thought-partner early in our process.

## HOW TO USE THIS GUIDE

Prepare for the experience of *Big Data* using these materials to understand and reflect upon the show's main ideas and themes. Although parts of this guide focus on ways teachers can prepare students for the show, there's something in here for every audience member who wants a deeper dive.

All hyperlinked materials and websites are click-able in the PDF version of the guide, available at [act-sf.org/bigdata](https://act-sf.org/bigdata).

Teachers: consider your curriculum, your own perspective, and how your students might engage with this information, then adjust the content as you see fit. Choose your own adventure and adapt the activities for your students' grade level, capacity, interests, and needs.

Please reach out to [education@act-sf.org](mailto:education@act-sf.org) if you have any questions or support needs. We hope you enjoy the show!

## NATIONAL ARTS STANDARDS ADDRESSED IN THIS GUIDE

<https://www.nationalartsstandards.org/>

- **Creating:** Conceiving and developing new artistic ideas and work - CR1, CR2, CR3.
  - CR1: Generate and conceptualize artistic ideas and work
  - CR2: Organize and develop artistic ideas and work
  - CR3: Refine and complete artistic work
- **Performing/Presenting/Producing:** Realizing artistic ideas and work through interpretation and presentation - PR4, PR6.
  - PR4: Analyze, interpret and select artistic work for presentation.
  - PR6: Convey meaning through the presentation of artistic work.
- **Responding:** Understanding and evaluating how the arts convey meaning - RE7, RE8.
  - RE7: Perceive and analyze artistic work.
  - RE8: Interpret intent and meaning in artistic work.
- **Connecting:** Relating artistic ideas and work with personal meaning and external context - CN10.
  - CN10: Synthesize and relate knowledge and personal experiences to make art.

PAM  
MACKINNON  
Artistic Director

JENNIFER  
BIELSTEIN  
Executive Director



## PRESENTS

### **BIG DATA**

By Kate Attwell

Directed by Pam MacKinnon

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Kathleen Donohue and David Sze  
Mary and Steven Swig

Lily Chu and Daniel Sturman

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**NATIONAL ENDOWMENT** for the **ARTS**  
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\*\*in memoriam

# BIG DATA

BY **KATE ATTWELL**  
DIRECTED BY **PAM MACKINNON**

## THE CAST

SAM **GABRIEL BROWN**  
LUCY **ROSIE HALLETT**  
DIDI **JULIA MCNEAL**  
TIMMY **MICHAEL PHILLIS**  
JOE **HAROLD SURRATT**  
MAX **JOMAR TAGATAC**  
M **BD WONG**

## UNDERSTUDIES

MAX, SAM **EDDIE EWELL**  
JOE **NORMAN GEE**  
M, TIMMY, MAX **JEREMY KAHN**  
DIDI, M **STACY ROSS**  
LUCY **MEGAN TROUT**

## STAGE MANAGEMENT

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ASSISTANT STAGE MANAGER **MEGAN MCCLINTOCK**  
SUBSTITUTE STAGE MANAGER **DICK DALEY**

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COSTUME DESIGN **LYDIA TANJI**  
LIGHTING DESIGN **RUSSELL H. CHAMPA**  
SOUND DESIGN **MADELEINE OLDHAM**  
PROJECTION DESIGN **KAITLYN PIETRAS AND JASON H. THOMPSON**  
DRAMATURG **JOY MEADS**  
CASTING **KATIE CRADDOCK**

## A.C.T. PRODUCING TEAM

ASSOCIATE ARTISTIC DIRECTOR **ANDY CHAN DONALD**  
DIRECTOR OF GENERAL MANAGEMENT  
& OPERATIONS **LOUISA LISKA**  
GENERAL MANAGER **AMY DALBA**  
DIRECTOR OF PRODUCTION **MARTIN BARRON**

*BIG DATA* was commissioned and developed at A.C.T. and developed in part  
at the Colorado New Play Festival, Steamboat Springs, CO, June 2023

The actors and stage managers employed in this production are members of Actors' Equity Association,  
the union of professional actors and stage managers in the United States.

Recording notice: The videotaping or making of electronic or other audio and/or visual recordings of this  
production, or distributing recordings on any medium, including the internet, is strictly prohibited.

# TABLE OF CONTENTS



*Click to be transported there*

<b>2</b>	<b>WELCOME</b>	<b>13</b>	<b>ACTIVITY: MOVING THE ALGORITHM (PART 2)</b>
<b>3</b>	<b>INTRO</b>	<b>14-15</b>	<b>DIGITAL AND CIVIC LITERACY SKILLS</b>
<b>4</b>	<b>TABLE OF CONTENTS</b>	<b>16</b>	<b>VIDEOS ON ARTIFICIAL INTELLIGENCE</b>
<b>5</b>	<b>ABOUT THE PLAY</b>	<b>17</b>	<b>MEET THE STAR OF THE SHOW</b>
<b>6</b>	<b>CHARACTERS' FAMILY TREE</b>	<b>18</b>	<b>LEARN MORE ABOUT BIG DATA IN THE NEWS</b>
<b>7-9</b>	<b>AN INTERGENERATIONAL CONVERSATION</b>	<b>19</b>	<b>COMING TO THE THEATER</b>
<b>10-11</b>	<b>FORMS OF PROTEST</b>	<b>20</b>	<b>AFTER THE SHOW</b>
<b>12</b>	<b>ACTIVITY: MOVING THE ALGORITHM (PART 1)</b>		

# ABOUT THE PLAY

## SYNOPSIS

Sam loves Timmy, and Lucy loves Max, but the pressures of modern life leave them susceptible to the siren song of tech. Do our devices—tantalizingly incarnate in this funny, sexy, uncanny world premiere—really know us best? Are our digital footprints predictive of our future choices, or are they choosing for us? When Sam and Lucy’s parents make a shocking announcement, the family is forced to confront what’s distracted them from each other—and the legacy they’ll leave behind.

A.C.T.’s Artistic Director Pam MacKinnon and playwright Kate Attwell reunite to realize this revolutionary piece, inspired by Attwell’s experience touring Mozilla’s “Glass Room” pop-up interactive exhibit in San Francisco. Come explore questions of attention, connection, nourishment, and the dizzying possibilities of AI.

## THEMES

**Big Data** is a family drama, and one character happens to be an algorithm. Eerily poignant for our times, the play addresses:

RELATIONSHIPS	HOW WE VALUE TIME	VORACIOUS CAPITALISM
DIFFERENT GENERATIONS FEELING DIFFERENTLY ABOUT TECHNOLOGY	HOW TECHNOLOGY IMPACTS INDIVIDUALS AND FAMILIES	FEELING UNDEFINED, SEARCHING FOR SELF
TECH ADDICTION, THIRST TRAPS AND CLICK BAIT	COMMUNICATION BETWEEN GENERATIONS	CHOICE AND THE LACK OF FREE WILL

### CONSIDER FOR STUDENTS:

Which themes are familiar to you?

What assumptions come to mind when you think about these themes?

What do these themes inspire or help you to imagine?

### CONSIDER FOR EDUCATORS:

How might these themes connect to existing curriculum or classwork?

How might these themes support your social-emotional learning goals?

## CONTENT WARNING:

This production includes frequent use of profanity, some sexual language, some sexual situations, discussion of suicide, and depictions of death.

### SUICIDE PREVENTION AND RESOURCES

Contact the 988 Suicide and Crisis Lifeline if you are experiencing mental health-related distress or are worried about a loved one who may need crisis support.

**Call or text 988, or chat at [988lifeline.org](https://988lifeline.org).**

Connect with a trained crisis counselor. 988 is confidential, free, and available 24/7/365.

[San Francisco Suicide Prevention \(SFSP\)](#)

[Suicide Prevention Resource Center](#)

### CONSIDER FOR EDUCATORS:

Do some of your students have mental health issues, and have they considered self-harm? Have some of your students experienced the death of a loved one?

What types of preparation or follow up would best support those students?

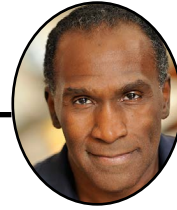
For example, does a student need to sit on the aisle so they can leave the theater if needed? Would they benefit from a personal follow up, to see how they’re doing after the show?

# CHARACTERS' FAMILY TREE



**DIDI**

played by JULIA MCNEAL  
(Mother to Sam and Lucy)



**JOE**

played by HAROLD SURRATT  
(Father to Sam and Lucy)



**SAM**

played by GABRIEL BROWN  
(Son to Didi and Joe)



**LUCY**

played by ROSIE HALLETT  
(Daughter to Didi and Joe)



**TIMMY**

played by MICHAEL PHILLIS  
(Partner to Sam)



**MAX**

played by JOMAR TAGATAC  
(Partner to Lucy)



**M**

played by BD Wong

The stranger who knows you a little too well - an embodied algorithm who is here to stay.

**embody** (transitive verb) em·bo·dy | \ im-'bā-dē

- 1: to give a body to (a spirit) : INCARNATE
- 2: to deprive of spirituality; to make concrete and perceptible
- 3: to cause to become a body or part of a body : INCORPORATE
- 4: to represent in human or animal form : PERSONIFY

**algorithm** (noun) al·go·rithm | \ 'algə,riT\_Həm

- 1: a step-by-step method for solving a problem (as finding the greatest common divisor) or accomplishing a goal
- 2: a process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer
- 3: a complex mathematical equation used by search engines to find data

# AN INTERGENERATIONAL CONVERSATION

EDITED BY NATALIE GREENE, DIRECTOR OF EDUCATION & COMMUNITY PROGRAMS

*Big Data* explores different responses to technology, and the way some people embrace it wholeheartedly while others take a more cautious approach. Often these different reactions are split along generational lines—another theme explored in this play.

Director of Education & Community Programs Natalie Greene recently spoke with three generations of the Harris Santiago family about their differing opinions and experiences with technology.

## **What role does technology play in your life?**

**ORION:** My cell phone is important in my daily life, I bring it everywhere. All of my school work is done on the computer instead of physical paper.

**JOSH:** I'd like to say I'm only medium-into tech, but I still use it a whole lot.

**LUCY:** Hell! I dread everything to do with technology...I have nothing good to say about it except that I appreciate the GPS on my car and that I can take pictures and send them to people.

## **What role does technology play in your family?**

**LUCY:** Everybody in the family is on the phone all the time—where would they be without it? They would be lost. We've also got people working from home, at least two people whose lives are totally technology dependent. It's dramatically affecting people's lives in my family.

**JOSH:** I didn't have a smartphone for so long, but I'm glad I have one now. We have our whole family chat groups, sending pictures of grandkids. It can be stressful because we're telling the kids to get off their screens, parents ask for help and get frustrated. But it's good to keep in touch with folks. With kids going away and being in college, I appreciate it more. It keeps us all connected.

**ORION:** Most of my mom's sisters are in Brazil; they Facetime each other every day. It's a way to still communicate with our family that's not here in the Bay Area. I also do that with my siblings who are in New York—we Facetime.

**LUCY:** I do like checking on all my grandchildren, it's great to see them every day on the phone. But at one point during Thanksgiving dinner everyone had their phone on. It's tricky!



LUCY HARRIS, AGE 80



JOSH HARRIS, AGE 55



ORION HARRIS SANTIAGO, AGE 17

***Let's talk about social apps: Instagram, Facebook, TikTok, YouTube, and other algorithm-driven stuff. Are you aware of how much time you spend with this type of technology?***

**JOSH:** I listen to a lot of music on YouTube, Spotify, Soundcloud. Then what got me really hooked was water slide fails on YouTube, I discovered the joy of videos on your phone. The most silly and ridiculous things! I totally loved them and then realized there's all kinds of stuff to watch on there.

**ORION:** I spend a good amount of time on YouTube for the purpose of learning guitar. I can get sucked into TikTok every once in a while. I'd say a good amount of time.

**LUCY:** I go onto this silly Instagram thing everyday 'cause my kids post on there, I look to see what they're doing rather than call to see what they're doing. I spend too much time if you ask me. I play the New York Times crossword puzzle a lot, my son put it on there. He was trying to be helpful but I'm not sure it was helpful—sorry I'm ragging on it. Because of tech I feel like I'm way more connected to all of my kids than I would have been otherwise, it's not all negative. I appreciate that I have that window into their lives and that opportunity to communicate with them. And I do, a lot.

**JOSH:** My mom texting is the greatest thing ever so she's not leaving long rambling voice messages once or twice a day. My mom learning how to text has definitely improved my quality of life.

***Is technology making you more or less connected?***

**JOSH:** Are we really connected?

**LUCY:** It's a funny kind of connected. It's not like you sit down and have a long heart to heart with your granddaughter over sushi. We drop each other these little notes, how are you? Blah blah blah. It feels a little superficial. I appreciate the connecting—it just doesn't always have a whole lot of depth to it.

**ORION:** With me and my siblings, since we live in different cities, different sides of the country, we have group chats on Instagram where we send each other funny videos. In ways it can connect us to each other but it can also pull us away from each other and we are isolated within ourselves. It's a bit of both.

**JOSH:** It's a kind of connection, but real human connections in real life are so much better.

**LUCY:** The family WhatsApp is very cool, everybody is posting various photographs, jokes, and comments. We're

all following what everyone else in the family is doing. That's special. There's not another way we could accomplish that kind of connection.

***Are these avenues of digital connectivity helpful? Harmful? Or both?***

**ORION:** I think if you just isolate yourself to stay on your phone for hours and not talk to anyone else in the house, it's an excuse to not have to engage or talk to the people around you. That's what I've seen personally, and it's not good.

**JOSH:** I like quality time together but not constant connectivity. It's harming our relationships when we sit in the living room with everyone buried with their heads in their own phone. So many distractions, we're not focused or present enough...“There might be something better than what you're doing right now!” And it was really bad when the kids were in middle school—there was bullying. They'd look at their phone and there'd be some harsh messages and they wouldn't be able to sleep.

**LUCY:** In general it's helpful for me because of the frequency and the ease for me to check in on how my kids are doing, and usually they get back to me. It can also be... how to say this? We've also gotten some really bad news in text messages. It seems like the potential for unhappy news, as well as happy news, makes it awfully easy. There's lots of potential for hurtful things happening, because it's so easy and, in a way, anonymous.

**ORION:** It's definitely taken its toll on me and everyone I know in my generation. We see so many models and gym influencers and stuff...body image and just how we see ourselves in general, it is hard to get out of.

***Thoughts on technology addiction?***

**LUCY:** I think everyone in the family is addicted to it, including me, and I'm horrified!

**ORION:** We all kind of are, even though we say we aren't. We each have our own little things we're addicted to watching. My dad watches more YouTube than I do, even though he won't admit it. And people younger than me? It's kind of their lifestyle. I see them act like the YouTubers or streamers they watch on their phone. They say jokes I don't even understand. It is very addictive, which is a little scary. I really see it play out in young people, how they act in real life.

***Does it concern you that your data is monetized? How do you feel about the fact that money is made with your personal information?***

**LUCY:** My husband is very cautious, he's much more apprehensive than I am. He's afraid that his information will



be abused, and it's definitely something to worry about, but it doesn't stop me from doing it.

**ORION:** I personally don't know too much about what goes into it money-wise. Me personally, I just kind of go with the flow of things. I try not to worry about the financial part of it, partly 'cause I don't really understand it.

**JOSH:** We're giving away all our data already. If you don't want to share your data, don't use this stuff. Unless people are stealing your banking information, who cares?

**LUCY:** Somehow my phone knows what I'm interested in without me telling it. Lately I'm getting all these Instagram feeds about new babies. I bought some baby toys for my new grandchild and all of a sudden every other image is something to buy for a baby. It really creeps me out, it's like someone is trying to read my mind about what I might be interested in. And where are they getting that information? It's unsettling to say the least.

***Do you think technology has a role to play in your legacy? What might you leave behind, online?***

**JOSH:** I've got a whole bunch of crypto currency my kids will never be able to find if I were to croak right now. No way they'll be able to find them all.

**LUCY:** When I'm gone, what's going to be left that I put in the cloud? I guess I would try to erase everything, but I don't know how to do that. That's a question I don't even have context for.

**ORION:** There's my dad's YouTube channel, he's been posting videos for 15 years and it's public to the world. Anytime I bring my friends over I show them old YouTube videos of me dancing at like 3 years old. My digital footprint...even if it gets deleted it can be found again. That's the scary part. If it's been posted before, it can always be found. You have to be really careful.

**JOSH:** Home videos are great though. We have so much fun looking at videos of the kids when they were little. Home videos are probably my favorite thing of all technology, because it really brings my family together.

***Any final thoughts?***

**LUCY:** It's a mixed blessing. I can't tell you how many times I'm so frustrated on a daily basis with navigating the internet. It doesn't come easily. When they design these apps they ought to have someone in the room that's over

70, I'm not sure there are people in the room speaking for us. If I didn't have kids and grandkids I could call and ask for help, I'd be in bad shape. I'm grateful, that's all I can say.

**ORION:** I'm curious to see what the future holds with AI, because it's helpful but it's a little terrifying. Chat GPT and Grammarly help me with my essays, but people like Elon Musk are out there creating actual robots as human as possible. I'm a little worried but also curious to see.

**JOSH:** It's not my favorite but it's where we live, so there you go.

## DISCUSSION QUESTIONS:

What role does technology play in your life?

What are the benefits of technology? And the dangers?

Is technology making you more or less connected?

How do you feel when you forget your mobile device or leave it somewhere?

How can social apps (such as facebook, instagram, snapchat, etc.) be harmful? Or beneficial?

How has technology impacted the child and parent relationship? Or with extended family?

How do you imagine different people in your family would answer some of these questions?

# FORMS OF PROTEST

## What is a Protest?

A protest is a demonstration to influence public opinion, voice displeasure, draw attention to injustice, or share information about something happening around you.

Throughout history, people all over the world have utilized the power of protesting to enact social change and bring attention to causes big and small. There are many forms of protest including non-violent practices such as sit-ins, marches and rallies. Other forms of protest can start as non-violent, but due to frustration, may lead to violence.

- **Nonviolent protests** where a person or group work together to enact change in a non-violent matter.
- **Violent protests**, sometimes called riots, use violence, destruction or intimidation to incite change.

## **REAL LIFE CONNECTIONS**

In *Big Data*, Didi and Joe protest the overpowering nature of technology and harvesting of personal information by destroying their varying forms of devices and ultimately choosing to leave the world behind with a suicide pact. Although, in real life, suicide is an act of despair, in the context of the play it is a form of protest.

Similarly to Didi and Joe, we see real life parallels with the protesting of Communist rule in China and a culture of endless work by young people through the “Tang ping” or “lying flat” movement.

“‘Lying flat’ is a neutral expression, a harmless choice to strive for nothing more than what is essential for their survival. But the phrase ‘let it rot’, which shows how people completely give up and are willing to accept an even worse situation, suggests a negative connotation, something that seems to be morally reprehensible.”

[From ‘lying flat’ to ‘letting it rot’: why China’s frustrated youth are embracing ‘bailan’ way of life](#)

## **SUICIDE PREVENTION AND RESOURCES**

Contact the 988 Suicide and Crisis Lifeline if you are experiencing mental health-related distress or are worried about a loved one who may need crisis support.

- Call or text 988, or chat at [988lifeline.org](https://988lifeline.org)

Connect with a trained crisis counselor. 988 is confidential, free, and available 24/7/365.

[San Francisco Suicide Prevention \(SFSP\)](#)

[Suicide Prevention Resource Center](#)

## FORMS OF PROTEST (PART 2)

### ADDITIONAL INVESTIGATION:

- Research historical protests and movements, look for examples that you consider “successful” or “unsuccessful,” then investigate why you think so, and what other options the protesters had.
- Research current protests and movements. What current issues are people protesting about? What criteria might you use to determine whether or not the protests are “working” or not? What other options can you imagine, and what other suggestions do you have?

### DISCUSSION QUESTIONS:

- Have you been to a protest? If so, describe what it was for and why you thought it was important. If you have not been to a protest, why not? Would you want to go to a protest? (Why or why not?)
- What are some causes and issues you feel it might be important to protest about?
- Why are protests useful or important?
- What criteria would you use to determine what is “effective” or “ineffective” as a protest? What other options or suggestions can you imagine?



# ACTIVITY: MOVING THE ALGORITHM (PART 1)

In *Big Data*, the character “M” is the stranger who knows you a little too well – he’s in your house, he knows everyone you know, he remembers personal information about you and he compares it with information he has about everyone and everything else. He is an **embodied algorithm**.

**This activity involves learning about literal and abstract gestures, reflecting on social media algorithms, and embodying our responses.**

PART 1: Review the definition & examples of **gesture**, and warm up using gestures.

**gesture (noun)** ges-ture | \ 'jes-chər

**definition:** a movement usually of the hand, arm, body, head, or face that expresses or emphasizes an idea, sentiment, or attitude

**example:** she raised her hands overhead in a gesture of triumph

- Define gesture and remind students:
  - They will be communicating with their bodies; no sounds or words
  - Only school-appropriate gestures!
- **Simple gesture warm up.** Students can be seated or standing in a circle. If students are doing gestures from their desks, ask them to move their chairs out a bit so they have space to move their arms and torso. If there is space, we recommend standing in a circle so they can see each others’ gestures! Ask students to repeat their chosen gesture several times and look around the circle at other variations. **Have students gesture for the following words and ideas:**
  - Yes / No (point out there are many correct answers! e.g. nodding head can mean yes, but so can thumbs up. remind students to create their own gestures and responses, encourage originality!)
  - Excited / Nervous / Surprised (happy) / Surprised (scared)
  - Brushing Teeth / Something Stinks / Come Here / Go Away
- Explain that they were just performing **literal gestures**, but that some gestures can be **abstract**.
  - Ask students to create a figure 8 with their hands or arms. Lead a short brainstorm re: what this gesture could mean. e.g. infinity, continuation, life and death... point out that the literal interpretation is the number 8, and the abstract interpretation contains multitudes!
- **Create gestures for various words.** Have students repeat gestures and select examples of **literal** or **abstract** gestures, point out those examples and have the full class try them. (e.g. for “Music” playing an instrument is a literal gesture vs. something representing the joy of music is an abstraction. OR for “Technology” typing on a computer is literal vs. something representing the complexities of technology is an abstraction.)
  - Love / Hate / Harmony / Conflict / Family
  - Music / Technology / Learning / War / Peace

As you lead this, encourage creativity, and emphasize that it’s not about “right or wrong,” it’s about about creative expression.

# ACTIVITY: MOVING THE ALGORITHM (PART 2)

PART 2: Using gesture skills from Part 1, students will **embody** their thoughts and feelings about social media **algorithms**.

**EXPLAIN:** After watching the following video, you'll be asked to write a personal response.

- Remember any main ideas or tips that seem relevant to you.
- Notice any feelings, ideas or examples that come to mind as you watch.

**WATCH:** [Social media algorithms explained | CBC Kids News](#) (3 mins)

**WRITE:** For 4-7 minutes, write in response to the video.

- Write which ideas or tips resonated for you, and why.
- Write any personal examples of what the video covered.
- Discuss ways social media algorithms are helpful or harmful.



**IDENTIFY:** Circle or underline 5-10 of the most powerful words or ideas from your writing. These could be nouns, verbs or adjectives... any words that have charge, that feel dynamic, particularly relevant or engaging.

**DISCUSS:** With a partner or small group, discuss 3-5 of the words you selected, and why.

**CREATE:** Individually look back at your list of words, and select 3 words that would inspire powerful movements and gestures. **Create a gesture for each word or idea.** Practice the gestures so you can repeat them consistently. Remind students gestures can be literal or abstract.

**SHARE and COMBINE:** Return to partner or small group, and **teach your gestures.** After learning everyone's gestures, **sequence all of the gestures in an order that seems dynamic and interesting.** Rehearse the sequence so that you can repeat it without saying the words, and remember to perform it with energy!

**PERFORM and DISCUSS:** Pairs or small groups **perform their gestures for the class** (without words) and the class then **guess some of the words that might have inspired the gesture sequence.**

- *Remind students, it's not a "gotcha"-style guessing game. It's not about guessing the "right" word, or getting the answer "wrong." Instead, it's about creative expressions and the conversations provoked.*
- Consider asking students what in the movement suggested what feelings, emotions or vibes. Consider asking them to share what is relatable or interesting, in relation to their own experiences.
- After the class guesses some of the words, the group then shares their words and any examples or quick stories they want to share.
- Optional add on: keep a list of the most dynamic, potent or relatable words that come up throughout the exercise, and have students return to small groups to discuss how those words & ideas have surfaced in their own experiences.
- Optional add on:
  - (1) if you're doing this activity BEFORE seeing the show, remind students that an actor portrays an algorithm in this production, and invite them to discuss what they expect and wonder about the characterization and embodiment, or (2) if you're doing this activity AFTER seeing the show, have students discuss the character "M," including what engaged or surprised them about his embodiment and characterization.

# DIGITAL AND CIVIC LITERACY SKILLS

We *highly recommend* the resources available through [Learning for Justice](http://www.learningforjustice.org) (www.learningforjustice.org), specifically the [Digital Literacy Framework](#) which offers seven key areas in which students need support developing digital and civic literacy skills.

OVERVIEW: The internet is an amazing tool for teaching and learning. But, before we can teach students to harness its power and become good citizens of the web, we need to understand the intricacies of how it works and how it can be manipulated to mislead and even harm users.

## **1. Students can locate and verify reliable sources of information.**

- Students Will...
  - Evaluate sources for reliability.
  - Use a variety of tools to evaluate sources for bias.
  - Understand and identify common reasoning errors.
- LESSON: [Evaluating Online Sources](#)

## **2. Students understand how digital information comes to them.**

- Students Will...
  - Evaluate search algorithms.
  - Choose high-quality sources for information.
- LESSON: [Understanding How Digital Information Comes to You](#)

## **3. Students can constructively engage in digital communities.**

- Students Will...
  - Display inclusivity and empathy during group communications.
  - Evaluate group communications for bias and hate.
- LESSON: [Constructively Engaging in Digital Communities](#)

## **4. Students understand how online communication affects privacy and security.**

- Students Will...
  - Map and monitor their digital footprint.
  - Identify platforms and techniques for safe digital communication.
- LESSON: [How Online Communication Affects Privacy and Security](#)

## **5. Students understand that they are producers of information.**

- Students Will...
  - Make and share digital content.
  - Remix and share digital content.
- LESSON: [How Fair Use Works](#)

## 6. Students understand their role as customers in an online marketplace.

- Students Will...
  - Evaluate the role of online advertisements.
  - Understand the larger economics of digital marketplaces.
- LESSON: [You Are the Product](#)

## 7. Students can evaluate the value of the internet as a mechanism of civic action.

- Students Will...
  - Understand the use of digital tools for active citizenship.
  - Evaluate the strengths and weaknesses of digital remedies for injustice and calls to action.
- LESSON: [Digital Tools as a Mechanism for Active Citizenship](#)

Common Core Standards identified for each lesson plan at [learningforjustice.org](http://learningforjustice.org)



# VIDEOS ON ARTIFICIAL INTELLIGENCE

Animate the lessons above with one or more of the following

## [Social media algorithms explained | CBC Kids News](#)

From **CBC Kids News**: On social media platforms like TikTok, YouTube and Instagram, the algorithm determines which posts you see and in what order. It also decides which posts you don't see. How does the algorithm decide what content to put in front of you? Well, it wants to serve you posts that will keep you engaged, and experts say that isn't always a good thing. CBC Kids News contributor Saara Chaudry explains what you need to know about social media algorithms. (3 min.)

## [What exactly is an algorithm? Algorithms explained | BBC Ideas](#)

From **BBC Ideas**: What is an algorithm? You may be familiar with the idea in the context of Instagram, YouTube or Facebook, but it can feel like a big, abstract concept. Here's presenter Jon Stroud with a step-by-step guide to what algorithms actually are, what algorithms do, and how algorithms work. (7 min. 53 sec.)

## [A brief history of AI](#)

From **Germany's Platform for Artificial Intelligence**: Plattform Lernende Systeme outlines the development of Artificial Intelligence (AI) since its beginning, illustrating various stages of technology development, milestones in AI applications and challenges that will arise in the future. (6 min. 2 sec.)

## [How does artificial intelligence learn? - Briana Brownell](#)

From **TED-Ed**: Today, artificial intelligence helps doctors diagnose patients, pilots fly commercial aircraft, and city planners predict traffic. These AIs are often self-taught, working off a simple set of instructions to create a unique array of rules and strategies. So how exactly does a machine learn? Briana Brownell digs into the three basic ways machines investigate, negotiate, and communicate. (4 min. 56 sec.)

## [How will AI change the world?](#)

From **TED-Ed**: In the coming years, artificial intelligence is probably going to change your life— and likely the entire world. But exactly how will AI affect our society? Can we build AI systems that help us fix the world? Or are we doomed to a robotic takeover? Explore the limitations of artificial intelligence and the possibility of creating human-compatible technology. This video is based on excerpts of an interview with Stuart Russell from the Radio Davos Podcast. (5 min. 55 sec.)

## [A.I. Expert Answers A.I. Questions From Twitter | Tech Support | WIRED](#)

From **WIRED**: Scientist and A.I. expert Gary Marcus answers the internet's burning questions about artificial intelligence. Will ChatGPT end college essays? Is Furby A.I.? How close are we to truly self-driving cars? Is the Turing test outdated? Gary answers all these questions and much more! (16 min. 31 sec.)



# MEET THE STAR OF THE SHOW



**BD WONG (M)** won all five New York theater awards, including the Tony, for his performance in *M. Butterfly* (his Broadway debut) and has since appeared in numerous Broadway, Off-Broadway, and regional productions. His many films include *Heart of Stone*, *Bird Box*, three *Jurassic World* films, *Focus*, *Mulan* (1 & 2), *Seven Years in Tibet*, *Father of the Bride* (1 & 2), and *Jurassic Park*. On television he has appeared on *The Girls on The Bus*, *Awkwafina Is Nora From Queens*, *Mr. Robot* (Emmy nomination), *American Horror Story: Apocalypse*, *Gotham*, *Madam Secretary*, *CSI: New Orleans*, *Law & Order: SVU*, *Oz*, and *All-American Girl*. (he/him) @wongbd

[Why is BD Wong excited to star in Big Data?](#) (51 sec.)

LOCAL NEWS STORIES featuring SF native: **BD Wong**

These stories feature behind-the-scenes clips of the rehearsal process, as well as personal insights about Big Data, technology, A.C.T. and growing up in the Bay!

[ABC7 News](#) (5 min. 16 sec.)

[CBS News Bay Area](#) (4 min. 11 sec.)

[FOX Local News](#) (5 min. 19 sec.)



## LEARN MORE ABOUT *BIG DATA* IN THE NEWS

Check out this feature in the [\*San Francisco Chronicle\*](#) with a closer look at BD Wong's character "M," the algorithm, and how it inserts itself into our daily lives.

And read this article about the origin of Big Data—and where it might lead us—in the [\*Nob Hill Gazette\*](#).

And this piece about tech-inspired performances and artwork taking place in San Francisco, in [\*SF Travel\*](#).



# COMING TO THE THEATER

## PRIOR TO YOUR VISIT

- Read the A.C.T. [“Rules of Play”](#) to learn more about how we hope you arrive, engage and enjoy the show!
- If your students would benefit from additional information about theater etiquette, consider discussing some of the points made by [Blake Theater](#).
- [Double check A.C.T.’s COVID-19 updates](#).
  - If you are feeling unwell, please stay home. If you or a member of your party is experiencing symptoms similar to those of COVID-19 or have had known exposure to someone with COVID-19, please stay home.
- [Learn about ACCESSIBILITY at A.C.T.](#)

## WHAT TO EXPECT WHEN YOU ARRIVE AT THE THEATER

- Front of House Staff including security personnel, ushers, and house managers are trained to assist guests and ensure that safety measures are followed. If you feel uncomfortable or perceive a risk at any time, please speak with one of these team members.
- Hand sanitizer stations are available throughout the theater.
- During the show, please stay in your seat unless using the restroom.



## AFTER THE SHOW

- Revisit parts of this guide that you didn't use before, including readings, videos & links, as well as activities and discussion prompts.
- Questions to consider:
  - How do the character's relationships change over the course of the play? Especially after they interact with "M".
  - How can you be a good citizen of the web?
  - How can you increase your digital literacy?
  - What are some ways AI affects our lives everyday?
- Use a "SEE - THINK - WONDER" discussion model:
  - What did you **see** in the show? What are some memorable moments, and why?
  - What did you **think** during the show? What were your favorite moments, and why?
  - What do you **wonder** about the show? What are you still curious about? If you could learn more about any of the characters, relationships or events, what would you want to know?
- Creative responses:
  - Write a scene where the character "M" interacts with you, a friend or a family member. Have a friend or classmate read the scene out loud with you.
  - Write a poem or draw a picture that reflects your thoughts or feelings about "M," about AI, or about technology at large.
  - Create something to send to the actors, director, playwright or creative team members of *Big Data*. This could be a letter expressing opinions and asking questions, or it could be a creative response to the show (a poem, a song, a dance, a drawing or a collage).
    - Email it to [education@act-sf.org](mailto:education@act-sf.org) and we will pass it along!

**THANK YOU FOR COMING TO A.C.T.**

**TONI  
REMBE  
A.C.T.**

**REMBE  
A.C.T.**

**THEATER  
A.C.T.**

**TONI REMBE THEATER**

NOW PLAYING  
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**TRAGEDY**

415