

# Complete Curriculum for Artificial Intelligence

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## ABOUT DOHA DEBATES

Doha Debates hosts discussions on the world's most pressing challenges to bridge differences, build consensus and identify solutions. In each moderated live debate, experts share their experiences and propose concrete plans. Doha Debates also offers digital resources such as videos and articles to help students build a deep understanding of the issues and to foster ongoing conversations.

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## GUIDE TO USING DOHA DEBATES CURRICULUM

Doha Debates curriculum may be used in a variety of ways. Each section (student-facing content page) will have an associated individual lesson plan. It is possible to use one lesson plan of your choice, the lesson plan(s) that best fit your timeframe. However, this complete and comprehensive curriculum packet is designed to build on the previous sections and lessons.

**The curriculum will focus around engaging students through the following techniques:**

1. Active learning
2. Collaborative learning
3. Discussions
4. Increasing student motivation and participation
5. Problem-based learning
6. Use of effective questions
7. Writing assignments

All of the lesson plans have at least one form of student engagement related to the lesson. Content can be tailored to most subjects. Specific time allotments are outlined on the next page and will be found in each lesson plan within the Learning Plan section. You may use any part of the Learning Plan components.



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**CONTENT THEMES  
& TIMEFRAME**

The following is a timeframe and content overview of the different sections included in this curriculum pack:

**LESSON 1** **Artificial Intelligence: Doha Debates Asks** (pages 4-5)

**In classroom:** 25 to 45 minutes

**Outside classroom:** 1 day for each activity

**Essential questions from Lesson 1:**

- What do you think of when you hear AI?
- Can computers have consciousness?
- Would you trust a computer to make important ethical decisions?
- If most jobs were automated, would the world be better or worse?
- Are there jobs AI can't do?
- If AI develops far enough, will machines deserve rights too?

**LESSON 2** **A Brief History of AI** (pages 6-7)

**In classroom:** 50 minutes to 1 hour 10 minutes

**Outside classroom:** 1 day first activity, 1 day+ for second activity

**Essential questions from Lesson 2:**

- How do people interact with AI?
- When was the idea of AI first created?
- What are the different types of AI?
- What is the roll of big data?
- Will AI become more intelligent than humans?
- Are there ethical, moral, or privacy issues with AI?
- What are the issues with facial recognition?

**LESSON 3** **The Trolley Problem / Ethics & AI** (pages 8-10)

**In classroom:** 1 hour 40 minutes to 2 hours 50 minutes and 1 to 2 days for part 7

**Outside classroom:** 1 day first activity, 1 day+ for second activity

Videos in this lesson/collection may be used individually or as a series within the context of the section.



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**CONTENT THEMES  
& TIMEFRAME****Essential questions from Lesson 3:**

- Is it possible for a computer to make an ethical or moral decision?  
(The Trolley Problem)
- Should AI be used in the courtroom?  
(Algorithmic (in)justice: What you need to know)
- Should companies invest more resources in AI or people with regard to who  
does the job. (The Future of Jobs)
- Is AI a risk to basic human rights? (AI: The New Arms Race)
- How do governments use AI? (AI: The Future of life and death decisions)

**LESSONS 4A TO 4D** **Speaker Highlights** (pages 11-25)**In classroom:** 1 hour 5 minutes to 2 hours 50 minutes (per speaker)**Outside classroom:** 1 to 2 days+ (per speaker)

Students will watch episodes for each speaker. This section has individual lesson plans for each speaker. Lesson plans follow the same format for each speaker but allow for a deeper analysis of each speaker by focusing on each one individually.

**Speakers**

- [Muthoni Wanyoike](#)
- [Dex Torricke-Barton](#)
- [Nick Bostrom](#)
- [Joy Buolamwini](#)

**LESSON 5** **The Connector** (pages 26-28)**In classroom:** 30minutes to 45minutes plus 1 day**Outside classroom:** Variable timeframe at the discretion of the teacher

This lesson ties all previous lessons together.

**LESSON PLANS AND ADDITIONAL RESOURCES FOLLOW**

## LESSON 1

# Doha Debates Asks

## STAGE 1: DESIRED GOALS

### ESTABLISHED GOAL

Students will hear differing views on Artificial Intelligence based on the Doha Debates video:  
[Artificial Interlligence: Doha Debates Asks](#)

### MEANING

#### Understandings

Students will understand that...

- Ai comes in many forms
- Ai is still in its early phases of use and
- Development
- People view ai in a variety of ways

#### Essential questions

- What do you think when you hear ai?
- Can computers have consciousness?
- Would you trust a computer to make important Ethical decisions?
- If most jobs were automated, would the world be Better or worse off?
- Are there jobs ai can't do?
- If ai develops far enough, will machines deserve Rights too?

### ACQUISITION

#### Students will know...

- Different ways AI is used
- Opinions their peers have about AI

#### Students will be able to...

- Recognize different uses of AI
- Express how other people see the use of AI

### ENGAGEMENT

#### Students will...

- Understand where other people think AI is used in daily life.
- Keep track of the student's daily use of AI

**LESSON 1** Doha Debates Asks

**STAGE 2: EVIDENCE & ASSESSMENT**
**ASSESSMENT EVIDENCE/  
PERFORMANCE TASK(S)**

- Use the scale created in class to judge each of the essential questions.
- Oral or written response to the essential questions.
- Explanation of how each student arrives at his or her view.

**STAGE 3: LEARNING PLAN**
**IN CLASSROOM  
LEARNING**

- |                      |   |
|----------------------|---|
| <b>5-10 minutes</b>  | Write the words "Artificial Intelligence" on the board and ask students what first comes to mind.   |
| <b>5-10 minutes</b>  | Create a list of where AI is found.   |
| <b>10-15 minutes</b> | Ask each of the essential questions in small groups or as a class.  |
| <b>5-10 minutes</b>  | Create a scale of some type, such as numbers 1 to 10, for later use in judging the essential questions and the importance, danger, or viability of the questions. |

**OUTSIDE OF  
CLASSROOM LEARNING  
(CHOOSE ONE OR  
MORE ACTIVITIES):**

- |               |   |
|---------------|---|
| <b>1 day</b>  | Ask 5 people outside of the classroom to make a list of where each person believes AI is found.           |
| <b>1 day+</b> | Keep track and create a list of all AI use for 1 day (or any number of days depending on teacher choice). |



## LESSON 2

# A Brief History of AI

## STAGE 1: DESIRED GOALS

### ESTABLISHED GOAL

Students will have a basic understanding of Artificial Intelligence and related issues to AI based on the: [A Brief History of AI](#)

### MEANING

#### Understandings

Students will understand...

- The different types of AI
- That AI is found in a variety of settings and situations
- People rely on AI in formats that are not always obvious

#### Essential questions

- How do people interact with AI?
- When was the idea of AI first created?
- What are the different types of AI?
- What is the roll of big data?
- Will AI become more intelligent than humans?
- Are there ethical, moral, or privacy issues with AI?
- What are the issues with facial recognition?

### ACQUISITION

#### Students will know...

- Key facts and dates about the origin of AI
- Who Alan Turing is and his connection to AI

#### Students will be able to...

- Explain the origins of AI
- Articulate where the student stands on issues related to AI use e.g. jobs, courtrooms, end of life decisions.

### ENGAGEMENT

#### Students will...

- Understand where other people stand on the essential questions
- Understand in greater detail the accumulation of personal data


**LESSON 2** A Brief History of AI

**STAGE 2: EVIDENCE & ASSESSMENT**
**ASSESSMENT EVIDENCE/  
PERFORMANCE TASK(S)**

- Students will do the activity The Intelligent Piece of Paper (on pages 9-10)
- Students will write a reflection piece at the end of the lesson on his or her current understanding of AI
- Oral or written responses to Essential Questions

**STAGE 3: LEARNING PLAN**
**IN CLASSROOM  
LEARNING**

- |                      |  |
|----------------------|--|
| <b>15-20 minutes</b> | Do the attached activity: The Intelligent Piece of Paper (follows)   |
| <b>20-30 minutes</b> | Next move on to the Essential Questions.<br>The questions may be discussed in a small group first and then as a whole class. |
| <b>15-20 minutes</b> | Students will write a brief reflection piece on their current understanding of AI through the Essential Questions.           |

**IN CLASSROOM  
LEARNING  
(NEXT DAY)**

- |                      |  |
|----------------------|--|
| <b>10-15 minutes</b> | Share the responses from the "outside classroom activity" once the information has been collected. |
| <b>10-15 minutes</b> | Discuss any results from the outside classroom activity #2.  |

**OUTSIDE OF  
CLASSROOM LEARNING  
(CHOOSE ONE OR  
MORE ACTIVITIES):**

- |               |   |
|---------------|---|
| <b>1 day</b>  | Ask three other people outside of school the Essential Questions.   |
| <b>1 day+</b> | Attempt to acquire personal data collected by at least 3 different websites that collect data on you e.g. Facebook, Snapchat, Tiktok, or any other type of social media site. |

**THE INTELLIGENT PIECE  
OF PAPER**

Created by Paul Curzon, Queen Mary University of London follows on next page.



## LESSON 3

# The Trolley Problem – Ethics & AI

## STAGE 1: DESIRED GOALS

## ESTABLISHED GOAL

Students will identify areas artificial intelligence is used and describe the moral and ethical issues presented by [The Ethics & AI video collection](#)

## MEANING

**Understandings**

Students will understand...

- The issues presented by AI from an ethical, moral, and privacy standpoint.
- AI's possible impact on jobs.
- AI's possible impact on the judicial system.
- AI's use by governments.

**Essential questions**

- Is it possible for a computer to make an ethical or moral decision?
- Should AI be used in a courtroom?
- With regard to job creation, should companies invest more resources in AI or in people?
- Is AI a risk to basic human rights?
- How do governments use AI?

## ACQUISITION

**Students will know...**

- Key facts about how governments use AI.
- Where they stand on how AI is used in different circumstances.

**Students will be able to...**

- Explain how AI is used different situations.
- Articulate where they stand on issues related to AI use, e.g.: jobs, courtrooms, end of life decisions.

## ENGAGEMENT

**Students will...**

- Understand how other people view the Trolley Problem and Moral Machine.
- See how AI is used in a business setting.



## LESSON 3 The Trolley Problem – Ethics & AI

### STAGE 2: EVIDENCE & ASSESSMENT

#### ASSESSMENT EVIDENCE/ PERFORMANCE TASK(S)

- Students will go through each [Doha Debate video](#) and discuss the related problems.
- In groups, students will present additional research relevant to each video topic, either in oral form or through a brief PowerPoint.
- Students will complete oral or written responses to the primary Essential Questions associated with each video, as well as complete any additional associated tasks.

### STAGE 3: LEARNING PLAN

#### IN CLASSROOM LEARNING

Each of the following may be used as a stand-alone lesson.

- |                      |   |
|----------------------|---|
| <b>15-20 minutes</b> | Start with Essential Questions. The questions may be discussed in small group first and then as a whole class.  |
| <b>15-30 minutes</b> | <p>Show <a href="#">The Trolley Problem video</a> and discuss as a class. Essential Question: Is it possible for a computer to make an ethical or moral decision?</p> <p>Do <a href="#">MIT's Moral Machine</a> problem and then discuss.</p>   |
| <b>20-40 minutes</b> | <p>Show <a href="#">Algorithmic (in)justice: What you need to know video</a> and discuss as a class. Essential Question: Should AI be used in the courtroom?</p> <p>Read &amp; discuss the National Law Review's <a href="#">Would You Trust An Artificially-Intelligent Expert?</a></p> <p>Read &amp; discuss <a href="#">American Bar Association's A 'principled' artificial intelligence could improve justice.</a></p> |
| <b>15-20 minutes</b> | <p>Show <a href="#">The Future of Jobs video</a> and discuss as a class. Essential Question: With regard to job creation, should companies invest more resources in AI or in people?</p> <p>Make a list of jobs that will be lost or not lost to AI.</p>  |


**LESSON 3** The Trolley Problem – Ethics & AI

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- |                      |   |
|----------------------|---|
| <b>15-20 minutes</b> | <p>Show <a href="#">AI: The New Arms Race</a> and discuss as a class.<br/>Essential Question: Is AI a risk to basic human rights?</p> <p>Make a list of the positive and negative aspects of AI.</p>  |
| <b>20-30 minutes</b> | <p>Show <a href="#">AI: The Future of Life and Death Decisions</a> and discuss as a class.<br/>Essential Question: How do governments use AI?</p> <p>Read &amp; discuss AMA's Journal of Ethics <a href="#">Ethical Dimensions of Using Artificial Intelligence in Health Care</a>.</p> |
| <b>1-2 days</b>      | <p>Groups will do additional background research on each of the videos, then present their findings to the whole class.</p>   |

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**OUTSIDE OF CLASSROOM LEARNING (CHOOSE ONE OR MORE ACTIVITIES):**

- |               |   |
|---------------|---|
| <b>1 day</b>  | Show the Trolley Video and Moral Machine to 3 to 5 people outside of school. Write down each person's answer to the problems posed. |
| <b>1 day+</b> | Visit a business that uses AI to learn more about how it functions for them. Then present your findings to the class.               |



## LESSON 4A

# Speaker

## Muthoni Wanyoike

## STAGE 1: DESIRED GOALS

**ESTABLISHED GOAL**

Articulate the role that artificial intelligence will play in creating more equity in Africa.

**MEANING****Understandings**

Students will understand...

- How AI will be used in Africa.
- Why AI is important to the speaker, based on the videos and background information provided.
- How AI is used to protect animals in Africa.
- How AI is used to help farmers.

**Essential questions**

- What role will AI play on the continent of Africa?
- How might AI help save wildlife and find poachers?
- How might AI help lift farmers out of poverty?
- Will AI improve customer service?

**ACQUISITION****Students will know...**

- Key facts about AI use in Africa.
- The role AI will play in the future
- development of Africa in a variety of ways.

**Students will be able to...**

- Identify the main ideas of the speaker.
- Express their findings orally and in writing.

**ENGAGEMENT****Students will...**

- Articulate how farmers use AI in Africa.


**LESSON 4A** Speaker Muthoni Wanyoike

**STAGE 2: EVIDENCE & ASSESSMENT**
**ASSESSMENT EVIDENCE/  
PERFORMANCE TASK(S)**

- Students will write a summary of the speaker's general position on AI based on the video and background content provided.
- Groups will present research and answers to Essential Questions posed by the speaker.

**STAGE 3: LEARNING PLAN**
**IN CLASSROOM  
LEARNING**
**15 minutes**

Watch the [Muthoni's Doha Debate presentation](#) and the [Speaker Spotlight segment](#). Make note of key points from these episodes.

**20-40 minutes**

Read the background content (page 13) to develop a deeper understanding of the speaker.

**5-10 minutes**

In small groups, discuss what each person identified as key points from the videos and background information.

**10-20 minutes**

As a class, discuss each group's findings.

**15-20 minutes**

In groups, pick one of the speaker's Essential Questions. Then research and present answers and describe additional supporting data.

**OUTSIDE OF  
CLASSROOM LEARNING**
**1-2 days+**

Students will research a specific organization or farmer in Africa that is currently benefiting from AI. Students will try to make direct contact with that organization or farmer to better understand how AI helps them. This may be done as a small group project. An example of a company using AI is [Agrix Technology](#).

**LESSON 4A** Speaker Muthoni Wanyoike**BACKGROUND INFO****ABOUT  
MUTHONI WANYOIKE**

Muthoni is a Programme Officer at Code for Africa's Storylab Academy which is working with African journalists and technologists to improve digital storytelling through the use of data and digital resources.

She is a team leader at Insta Deep, an AI startup; an organizing committee member of Deep Learning Indaba, a conference focused on AI and emerging technology; and a co-organizer of the Nairobi Women in Machine Learning and Data Science community.

Muthoni is passionate about empowering and creating opportunities for women. Through the Nairobi Women in Machine Learning community, she is creating opportunities for women to network, learn from each other, and grow their data science careers. As a WiDS ambassador, she believes in creating a strong community network of women in data science to learn, engage and inspire.

**MUTHONI'S  
KEY POINTS FROM  
DOHA DEBATES  
PRESENTATION**

- Africa is a powerhouse of the future
- The importance of mindful optimism
- AI is improving quality of life in Africa
- AI is tracking elephants to help better know where poachers may be found
- The benefits of cellphones
- The organization InstaDeep which is an AI startup
- AI brings opportunity
- The three keys of AI in Africa:
  1. Helping save wildlife
  2. Lifting farmers out of poverty
  3. Improving customer service

**LESSON 4A** Speaker Muthoni Wanyoike

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**ARTICLES**

The Future of Data Science and AI is Promising.

[Read on Techweez.com](#)

ART + AI - Generating African Masks using (Tensorflow and TPUs).

[Read on towardsdatascience.com](#)

12 meetups later, here's 10 invaluable lessons we've learned on building a tech community.

[Read on Medium](#)

Deep dive into digital security and privacy for journalists.

[Read on Medium](#)

Fake News: 12 tools for sifting the truth.

[Read on Medium](#)

Practical Tactics to fight misinformation for Journalists on Twitter.

[Read on Medium](#)

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**VIDEOS**

Applications of AI, ML and Data Science in Kenya.

[Watch on YouTube](#)

Nairobi Women in Machine Learning and Data Science.

[Watch on Facebook](#)

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**OTHER**

Follow on [Medium](#)

[Podcast: AI Corporations and Communities in Africa with Karim Beguir & Muthoni Wanyoike](#)



## LESSON 4B

# Speaker

## Dex Torricke-Barton

## STAGE 1: DESIRED GOALS

## ESTABLISHED GOAL

Articulate the importance of people in positions of power, such as politicians, understanding AI.

## MEANING

**Understandings**

Students will understand...

- AI is still in its infancy
- People in technology fields need to work with policy makers and politicians
- AI is not itself good or evil but simply a tool
- Who should be making decisions about AI development

**Essential questions**

- How might AI solve world problems?
- What can people in positions of power do with regard to AI?
- Why is it important for people in the technology fields to work with policy makers?
- At what level should politicians understand AI?
- Is AI good, evil, or just a tool to be used?

## ACQUISITION

**Students will know...**

- Some people are not staying calm about the development of AI
- Key players in AI development

**Students will be able to...**

- Identify the need to have people in power better understand AI
- Express their views on who should help regulate AI development

## ENGAGEMENT

**Students will...**

- Engage with politicians to learn what they know about AI
- Engage with a person in the technology sector to learn what people in the field believe is the roll of politicians


**LESSON 4B** Speaker Dex Torricke-Barton

**STAGE 2: EVIDENCE & ASSESSMENT**
**ASSESSMENT EVIDENCE/  
PERFORMANCE TASK(S)**

- Write a summary of the speaker's general position on AI based on the video and background content
- Group presentation of data found to answer each of the Essential Questions presented by the speaker

**STAGE 3: LEARNING PLAN**
**IN CLASSROOM  
LEARNING**

<b>15 minutes</b>	Watch the <a href="#">Dex's Doha Debate presentation</a> and the <a href="#">Speaker Spotlight segment</a> . Make note of key points from these episodes.
<b>20-40 minutes</b>	Read the background content (page 17) to develop a deeper understanding of speaker.
<b>5-10 minutes</b>	In small groups discuss what each person drew from the videos and background information as key areas.
<b>10-20 minutes</b>	Discuss each group's findings as a class.
<b>15-20 minutes</b>	Groups will pick one of the Essential Questions from the speaker and find additional data to better understand the question.

**OUTSIDE OF  
CLASSROOM LEARNING**

<b>1-2 days+</b>	Students, either independently or in small groups, will talk with a politician about their understanding of AI. The student(s) will develop a set of 3 to 5 questions about AI to ask the individual. The politician may be at any level of government.
<b>1 day</b>	Students, either independently or in small groups, will talk with someone in the Technology field about their personal view on the role of politicians regarding AI. The student(s) will develop a set of 3 to 5 questions about AI to ask the individual.

**LESSON 4B** Speaker Dex Torricke-Barton**BACKGROUND INFO****ABOUT  
DEX TORRICKE-  
BARTON**

Dex has more than a decade of experience advising some of the world's most influential leaders and organizations on CEO communications and reputational management, thought leadership and strategic communications.

After beginning his career as speechwriter and spokesperson for the office of United Nations Secretary General Ban Ki-Moon from 2008-10, Dex joined Google as the company's first executive speechwriter, where he supported Executive Chairman Eric Schmidt, CEO Larry Page and other senior leaders. From 2012-16, Dex led executive communications at Facebook, where he managed communications for Mark Zuckerberg and Sheryl Sandberg. Subsequently, he led communications for Elon Musk at SpaceX.

Before joining Brunswick in July 2018, Dex served as an independent strategic communications adviser for major tech companies, US and UK political leaders. He is a frequent public speaker on issues around global connectivity and emerging technologies, and a New York Times-bestselling ghostwriter. He holds an MPhil in Russian & East European Studies from the University of Oxford, and a BA in Politics & East European Studies from University College London.

**DEX'S  
KEY POINTS FROM  
DOHA DEBATES  
PRESENTATION**

- AI is still in its infancy. It is more parrot like.
- Some people aren't staying calm about AI such as those who believe in "killer robots".
- AI won't solve world problems. That takes people in positions of power.
- Tech people need to work with policy makers.
- Politicians are often bad at making policy decisions about technology.
- Who should actually be making decisions about AI development?
- Politicians need to understand the technology about which they speak.
- AI is a tool, not good or evil.

**LESSON 4B** Speaker Dex Torricke-Barton

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**ARTICLES**

Facebook is a force for good. [Read on HuffPo](#)

I'm a Legal Immigrant and I Welcome the President's Action on Immigration  
[Read on HuffPo](#)

The Technology of Peace. [Read on HuffPo](#)

Our Responsibility of Afghanistan. [Read on HuffPo](#)

We don't know how to stop Iran. [Read on HuffPo](#)

The failure of the Green Movement. [Read on HuffPo](#)

SpaceX exec quits to fight Trump 'nightmare'.  
[Read on CNN Money](#)

Want to Resist Trump or Make America Great Again?  
These People Switched Careers.  
[Read on NYTimes](#)

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**VIDEOS**

How the internet is uniting the world. [Watch TEDxTalks on Youtube](#)

A Global Generation. [Watch on YouTube](#)

No Ban No Walls in San Francisco. [Watch on YouTube](#)

The Impact of Technology Sesame Summit 2019. [Watch on YouTube](#)

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**OTHER**

[Twitter](#)  
[Instagram](#)



## LESSON 4C

# Speaker

## Nick Bostrom

## STAGE 1: DESIRED GOALS

## ESTABLISHED GOAL

Explain the importance of the short and long term views of AI development.

## MEANING

**Understandings**

Students will understand...

- The possible issues with continued progress in AI development
- What near term benefits come from AI
- The possible impact of AI replicating human intelligence
- It is difficult to stop progress

**Essential questions**

- If progress in AI is rapid, what might it lead to?
- Why is it important to look at AI from the short term and long term perspectives?
- What might be the impact of AI super intelligence developing?
- Is it possible to stop AI development and progress?
- Would someone be willing to take a stand on the issue of AI?

## ACQUISITION

**Students will know...**

- The possible existential risk associated with AI
- What mechanized super intelligence means in the long term

**Students will be able to...**

- Identify the need to have people in power better understand AI
- Express their views on who should help regulate AI development

## ENGAGEMENT

**Students will...**

- Understand concerns with AI development


**LESSON 4C** Speaker Nick Bostrom

**STAGE 2: EVIDENCE & ASSESSMENT**
**ASSESSMENT EVIDENCE/  
PERFORMANCE TASK(S)**

- Write a summary of the speaker's general position on AI based on the video and background content
- Group presentation of data found to answer each of the essential questions presented by the speaker

**STAGE 3: LEARNING PLAN**
**IN CLASSROOM  
LEARNING**

<b>15 minutes</b>	Watch <a href="#">Nick's Doha Debate presentation</a> . Make note of key points from this video.
<b>20-40 minutes</b>	Read the background content (page 21) to develop a deeper understanding of speaker.
<b>5-10 minutes</b>	In small groups discuss what each person drew from the video and background information as key areas.
<b>5-10 minutes</b>	Review <a href="#">An Open Letter: Research Priorities for Robust and Beneficial Artificial Intelligence</a> . Discuss who would or would not be willing to sign it and why.
<b>10-20 minutes</b>	Discuss each group's findings as a class.
<b>15-20 minutes</b>	Groups will pick one of the essential questions from the speaker and find additional data to better understand the question.

**OUTSIDE OF  
CLASSROOM LEARNING**

<b>1-2 days+</b>	Students (individually or in groups) will interview 5 to 10 people about concerns about AI development currently and in the future. The information will be brought back to the classroom to share with the class.
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**LESSON 4C** Speaker Nick Bostrom**BACKGROUND INFO****ABOUT  
NICK BOSTROM**

Nick Bostrom is Swedish-born philosopher and polymath with a background in theoretical physics, computational neuroscience, logic, and artificial intelligence, as well as philosophy. He is Professor at Oxford University, where he leads the Future of Humanity Institute as its founding director. (The FHI is a multidisciplinary university research center; it is also home to the Center for the Governance of Artificial Intelligence and to teams working on AI safety, biosecurity, macrostrategy, and various other technology or foundational questions.)

He is the author of some 200 publications, including *Anthropic Bias* (2002), *Global Catastrophic Risks* (2008), *Human Enhancement* (2009), and *Superintelligence: Paths, Dangers, Strategies* (2014), a New York Times bestseller which helped spark a global conversation about artificial intelligence. Bostrom's widely influential work, which traverses philosophy, science, ethics, and technology, has illuminated the links between our present actions and long-term global outcomes, thereby casting a new light on the human condition.

**NICK'S  
KEY POINTS FROM  
DOHA DEBATES  
PRESENTATION**

- If progress continues to be rapid, what might it lead to?
- The importance of looking at AI in the short term and long term.
- The vast benefits of AI in the short term.
- The long term view of AI should consider the possible replication of human intelligence.
- How might mechanized super intelligence change or even challenge humans?
- The long term existential risks of AI.
- It is important to realize it isn't possible to stop progress.

**LESSON 4C** Speaker Nick Bostrom

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**ARTICLES**

Artificial intelligence: 'We're like children playing with a bomb.'

[Read on The Guardian](#)

Philosopher Hadn't Seen "The Matrix" Before Publishing Simulation Hypothesis.

[Read on Futurism.com](#)

Nick Bostrom has over 200 publications. For additional articles please see Nick Bostrom's [personal website](#) for selected papers on Ethics and Policy, Risk and the Future, Anthropics and Probability, Technology Issues, Transhumanism, and the Philosophy of the Mind. In addition there are Interviews and other miscellaneous content.

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**VIDEOS**

Sam Harris and Nick Bostrom - Pulling a Black Ball from the Urn of Invention.

[Watch on YouTube](#)

Prof. Nick Bostrom - Artificial Intelligence Will be The Greatest Revolution in History.

[Watch on YouTube](#)

Nick Bostrom: "Superintelligence". [Watch Talks at Google on YouTube](#)

What happens when our computers get smarter than we are?

[Watch TEDxTalks on YouTube](#)

The Future of Machine Intelligence - Nick Bostrom, at USI. [Watch on YouTube](#)

The Perfect Human Being Series E17 - Nick Bostrom on superintelligence.

[Watch on YouTube](#)

Why we love doomsday scenarios. [Watch on YouTube](#)



## LESSON 4D

# Speaker

## Joy Buolamwini

## STAGE 1: DESIRED GOALS

## ESTABLISHED GOAL

Explain how, without oversight, AI will amplify inequality and bias within AI.

## MEANING

**Understandings**

Students will understand...

- The various ways AI is unchecked, unregulated, and unwanted
- How AI has problems with current facial recognition technology
- The importance of justice and inclusion in AI development
- What the benefits of the Safe-Face Pledge and its use

**Essential questions**

- How might people be overconfident and underprepared for AI?
- How might AI create inequality?
- What areas in AI are there shortcomings in its development?
- In what ways are there biases and “coded gaze” found in AI?
- How will people outside of the tech world have a say in AI development?

## ACQUISITION

**Students will know...**

- Key areas where the “coded gaze” is found in AI
- The need for additional input around AI from people outside of the technology world

**Students will be able to...**

- Explain where inequality and biases are found in AI
- Recognize how AI may magnify the flaws of its makers

## ENGAGEMENT

**Students will...**

- Understand various ways bias and inequality are found in AI.


**LESSON 4D** Speaker Joy Buolamwini

**STAGE 2: EVIDENCE & ASSESSMENT**
**ASSESSMENT EVIDENCE/  
PERFORMANCE TASK(S)**

- Write a summary of the speaker's general position on AI based on the video and background content.
- Group presentation of data found to answer each of the essential questions presented by the speaker.

**STAGE 3: LEARNING PLAN**
**IN CLASSROOM  
LEARNING**
**15 minutes**

Watch the speaker's Doha Debate presentation (Joy) and each speaker's individual segment (Joy).

Write key points of the speaker's presentation for the Doha Debate segment and the Speaker Spotlight segment.

**20-40 minutes**

Read the background content to develop a deeper understanding of speaker.

**5-10 minutes**

In small groups discuss what each person drew from the videos and background information as key areas.

**10-20 minutes**

Discuss each group's findings as a class.

**15-30 minutes**

Groups will pick one of the three essential questions from the speaker and find additional data to better understand the question.

**OUTSIDE OF CLASSROOM  
LEARNING**
**1 to 2 days+**

Students, either individually or in small groups, will find examples of bias and inequality in AI. This may be from specific examples found in AI used day or from interviews with people who may have experienced AI in day to day life. The student(s) will bring the findings back to the classroom to share.

**LESSON 4D** Speaker Joy Buolamwini

**BACKGROUND INFO**
**ABOUT  
JOY BUOLAMWINI**

Joy Buolamwini is a poet of code, computer scientist, and digital activist who uses art and research to illuminate the shortcomings of artificial intelligence. She founded the Algorithmic Justice League to create a world with more ethical technology. Her TED Featured Talk on algorithmic bias has over 1 million views. Her MIT thesis methodology uncovered large racial and gender bias in AI services from companies like Microsoft, IBM, and Amazon. In addition to advising elected officials during US congressional hearings, she serves on the Global Tech Panel to advise world leaders and executives on reducing AI harms.

Joy has written op-eds on the impact of AI for publications like TIME Magazine and New York Times. Her spoken word visual audit "AI, Ain't I A Woman" which shows AI failures on the faces of iconic women like Serena Williams, Oprah Winfrey, and Michelle Obama has been part of exhibitions ranging from Ars Electronica to the Barbican Centre, UK. A Rhodes Scholar and Fulbright Fellow, Joy has been named to notable lists including the Bloomberg 50, Forbes Top 50 Women in Tech (youngest), and Fortune Magazine (40under40) named her "the conscience of the AI revolution". She holds graduate degrees from Oxford University and MIT; and a bachelor's from the Georgia Institute of Technology. As a former pole vaulter, she still holds Olympic aspirations if not realities.

**JOY'S  
KEY POINTS FROM  
DOHA DEBATES  
PRESENTATION**

- People are overconfident and unprepared as AI develops.
- There is a risk of abuse and bias with AI. There are times where AI is unchecked, unregulated, and unwanted.
- The role of inequality within AI.
- AI magnifies the flaws of its makers.
- There is an issue of "coded gaze" with AI.
- Dealing with AI's shortcomings.
- AI programs not recognizing black faces or other faces of color.
- The problems with the exploitation of the data wealth of the global south.
- The role of data colonialism. The Safe-Face Pledge.
- The importance of having a say in how AI is used.
- The need for justice and inclusion with the development of AI.

**LESSON 4D** Speaker Joy Buolamwini

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**ARTICLES**

An MIT researcher who analyzed facial recognition software found eliminating bias in AI is a matter of priorities.' [Read on Business Insider](#)

Halt the use of facial-recognition technology until it is regulated.  
[Read on Nature.com](#)

Artificial Intelligence Has a Problem With Gender and Racial Bias.  
Here's How to Solve It. [Read on TIME](#)

Amazon Is Pushing Facial Technology That a Study Says Could Be Biased.  
[Read on NYTimes](#)

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**VIDEOS**

Algorithmic Justice [Watch on thirteen.org](#)

The Government Is Using the Most Vulnerable People to Test Facial  
Recognition Software [Watch on slate.com](#)

The Coded Gaze: Unmasking Algorithmic Bias. [Watch on YouTube](#)

How I'm fighting bias in algorithms. [Watch TEDxTalks on Youtube](#)

Compassion through Computation: Fighting Algorithmic Bias. [Watch on YouTube](#)

Code4Rights, Code4All. [Watch on YouTube](#)

Handle AI with care! Like fire, it is dangerous but has its uses. [Watch on YouTube](#)

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**OTHER**

[Twitter](#)  
[Instagram](#)  
[Medium](#)  
[Personal website](#)



## LESSON 5

# Connector

## STAGE 1: DESIRED GOALS

### ESTABLISHED GOAL

- Explain the meaning and role of the Majlis.
- Describe and articulate the connections between differing views on AI.
- Express the themes discussed by the Connector.

### MEANING

#### Understandings

Students will understand...

- There a variety of views regarding AI.
- AI is a technology that will be part of the student's future.
- There are areas of consensus that are found regarding AI.
- It is necessary to get clarity on issues where individuals do not agree.

#### Essential questions

- What is a Majlis?
- Is AI here and will it continue to grow?
- How should AI be regulated?
- What are the time horizons regarding AI both in the short and long term?

### ACQUISITION

#### Students will know...

- Key facts about how AI is viewed within different contexts and settings.
- How AI is seen in different cultural settings.
- The importance of resolving conflict over issues such as AI.

#### Students will be able to...

- Recognize differing views on AI.
- Express personal stance regarding AI.
- Use research skills to find information to support the student's view on AI.

### ENGAGEMENT

#### Students will...

- Use what they have learned to engage in new ways with AI.


**LESSON 5 Connector**
**STAGE 2: EVIDENCE & ASSESSMENT**
**ASSESSMENT EVIDENCE/  
PERFORMANCE TASK(S)**

- Find data to support one of the three themes discussed by the Connector in groups which will then be presented to the class.
- Write a final paper on where the student stands on AI with supporting resources and evidence.

**STAGE 3: LEARNING PLAN**
**IN CLASSROOM  
LEARNING**

<b>5 minutes</b>	Read about the majlis being part of UNESCO's <a href="#">Intangible Cultural Heritage</a> .
<b>5-10 minutes</b>	Read <a href="#">How a majlis can open minds and shape our perspectives</a> .
<b>5-10 minutes</b>	Watch the <a href="#">Connector video</a> . The second half of the full debate may be used to hear additional comments from each presenter.
<b>1 day</b>	<p>The class is split into three groups. Each group is given one of the common themes discussed in the Connector video. The group will find information that supports and refutes the specific theme. The three themes are as follows:</p> <ol style="list-style-type: none"> <li>1. AI is here and will continue to grow.</li> <li>2. The regulation of AI.</li> <li>3. The time horizons of AI both in the short term and long term.</li> </ol> <p>The class will come together to discuss the three common themes based on the information that each group has found. This discussion will follow the majlis format.</p>
<b>15-20 minutes</b>	The class may watch additional sections of the full Doha Debate to listen to what each speaker talks about during the majlis.
<b>15-20 minutes</b>	The class will create an agreed upon conclusion or possible solutions related to the issues presented about AI.
<b>10 minutes</b>	A brief discussion on possible additional topics that might fit the majlis format.
<b>1 day+</b>	Each student will write a final paper on where the student now stands on the issue of Artificial Intelligence.



LESSON 5 Connector

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**OUTSIDE OF CLASSROOM  
LEARNING**

**Variable time**

Students will keep a journal for the rest of the semester to keep track of all the ways they engage with AI outside of the classroom. This may be used for a larger discussion near the end of the semester.