UNBIAS FACILITATOR BOOKLET

CONTENTS

INTRODUCTION

Algorithms are everywhere. They are increasingly being used to make decisions that affect many aspects of our lives, on a scale that is now unprecedented. The 'Fairness Toolkit' Awareness Cards are designed to help people to engage in a public civic dialogue about algorithms, to encourage people of all ages to think about the impact that algorithms may have.

For a free download of the 'Fairness Toolkit', including the Awareness Cards, please visit: unbias.wp.horizon.ac.uk/fairness-toolkit
Professionally produced decks of cards can be purchased at cost-price online at www.makeplayingcards.com/sell/marketplace/unbias-awareness-cards-set.html

The UnBias team at the University of Nottingham ran workshops with different age groups to ask them to try out the cards, to give feedback on them and to come up with other ways of using them, which are fun, informative and that further the dialogue amongst these groups.

Two workshops each were run with people aged 13-17 years, 18-29 years, 30-50 years and the over 65s. This booklet provides **a selection** of the games and activities that were created or co-designed with people from these groups. We hope that these are useful for facilitators, whether they be teachers, group leaders or others who would like to run workshops with these age groups and others, or to provide inspiration for other discussions relating to issues of bias, trust and fairness in algorithmic systems.

Also included within this booklet is further advice and feedback from those that ran the workshops, relating to what approaches work best with different types of group.

The team would especially like to thank **all** those who took part in the workshops for their thoughtful feedback and contributions.

THE AWARENESS CARDS

The UnBias Awareness Cards are part of a Fairness Toolkit, which has been created to explore issues of bias, fairness and trust in algorithmic systems. Each pack of cards contains eight suits:

1 GLOSSARY CARD
Provides a simple definition of what an algorithm is and does.

8 RIGHTS CARDS
Legal rights that we have both offline and online, and which are upheld by the United Kingdom.

12 DATA CARDS
Lists different types of data that may be shared with platforms and websites.

12 EXAMPLE CARDS
Contain real life examples that relate to algorithm bias.

10 VALUE CARDS
List examples of the types of values and motivations that might affect how an algorithm is created and used.

8 PROCESS CARDS
Invite users to '*Be the algorithm*' by considering what inputs, steps, and other factors might influence the way an algorithm functions, and the consequences of its decisions.

4 FACTORS CARDS
Encourage users to think about factors that might influence decision making, whether human or algorithmically-moderated.

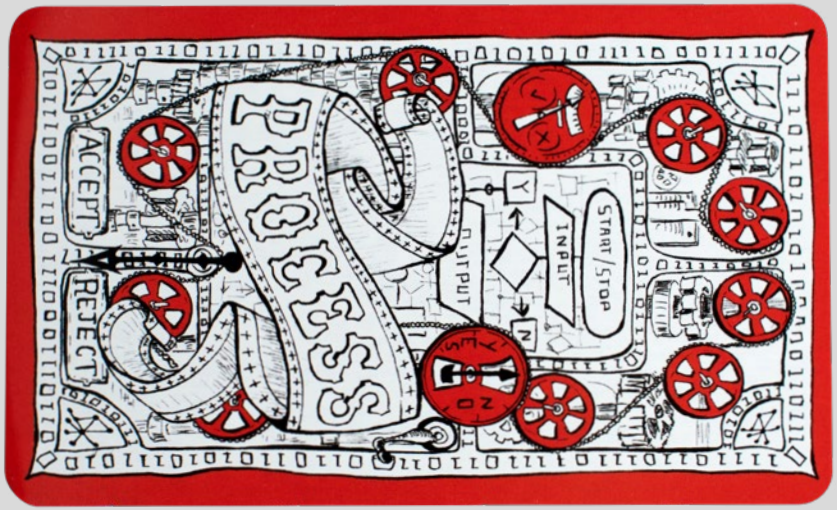
8 EXERCISE CARDS
Group activities to explore issues of bias, trust, unfairness, and discrimination.

INTRODUCTION TO THE PROCESS CARDS

***Process* cards are intended to help people to think about how algorithms are programmed, and what purpose they may have. These cards also help to introduce and familiarise people to the deck as a whole, as the cards generally require users to engage with most if not all of the suits.**

We found that all age groups enjoyed working with this suit. However, facilitators should pick a card from the suit that they think their group will be able to engage with the most. The young adults could relate best to the 'Going to University' or 'Hiring Staff' cards, whilst the older adults found the 'Offering a Loan' and 'Selling Insurance' most relatable. It helps to split your group into small groups of four or five, and to have one pack of cards per group.

Whilst each *Process* card forms a complete activity that often uses the *Values*, *Rights*, and *Data* cards, each card has a slightly different method. In situations with several groups, it might be useful to have the same steps for each *Process*, the following provides a suggested format. It helps to have a large sheet of paper and post-it notes to build the algorithm.



- **What is the scenario? What does the algorithm do?** Choose a *Process* card, and create the context in which the algorithm will be used. To help with this it might be useful to give each group a couple of *Values* cards to frame motivations. For example, for the 'Spread a rumour' card, you might want to convince people that a high street store is under threat of closing. Along with 'Tradition' and 'Affiliation & Belonging' this might be part of a campaign to save the high street, but with 'Commerce' and 'Power' the aim might be getting people to choose a different shop or to shop online. The facilitator might want to decide this beforehand to save time.
- **Who is the target audience?** Discuss the people or groups the algorithm would target or prioritise. Note that this might not be relevant to every card, and it will be related to the context chosen in the previous step.
- **What data is relevant and why?** Deal out all of the *Data* cards, and choose every piece of data that might be useful to the algorithm – not just the title of the card, but take each bullet point as separate. You may also want to discuss why each is important.
- **What data is most important or influential?** From the created list, decide the THREE types of data that are vital for the algorithm to do its job, and target the correct people.
- **What secondary data would improve the algorithm?** Discuss the remaining data and decide on FIVE more types of data which would help the algorithm to make the decision it is designed for.
- **What are the challenges?** Once the above stages are complete, the algorithm is built. Use the remaining time to challenge and discuss the way it works using the *Rights*, *Factors*, and remaining *Values* cards. For example:
  - *Factors*: How would you justify your actions as fair and trustworthy? Is the algorithm fair? Does it discriminate against certain people?
  - *Rights*: What rights would you need to respect and comply with? What might be violated by using an algorithm in this way?
  - *Values*: What could the consequences be? Could someone with conflicting values use this algorithm for other purposes?

INTRODUCTIONS TO THE EXERCISE CARDS

The *Exercise* cards are a set of dynamic group activities for exploring how bias, trust, prejudice, unfairness, and discrimination operate, across all areas of life and not just online or in algorithmically-mediated systems.

The cards were created with an expert in improvisational theatre, and provide opportunities for role play, improvisation, collaboration, and shared experiences. They encourage people to draw upon their own experiences, and on stories they may have encountered in the media, as well as promoting consideration of our own biases and values that affect our everyday lives.

There are some considerations you should take into account before using this suit. Some of the cards may be less suitable to the older age groups or groups who are reluctant to take active roles. Some may also have the potential to cover some quite sensitive topics, so it is important to make sure you are very familiar with what the cards are asking and consider setting some clear ground rules for the types of statements that may be made.

Whilst the activities on the cards themselves are not focused on either the online world or on how algorithms work, by highlighting the potential assumptions we have, judgments we make, and values we hold as individuals, they allow us to consider a) how these might get built into an algorithmic system by the people programming them, and b) how the judgments an algorithm makes might manifest in similar or different ways to those of a human. Often this leads to considerations of context, the ability to change our minds, and the contradictory opinions we often hold – none of which an algorithm can consider.

KNOWLEDGE AND LEARNING

During each of the workshops, we distributed questionnaires to gain feedback from participants on the Awareness Cards, and to find out how much they felt that they had learnt from using them. They showed that the cards were well received, and effective as educational materials (Figures 1 and 2).

> **"I think the cards are useful to anyone who does not have a lot of existing knowledge about the topics but particularly within diverse groups which will facilitate discussion beyond basic conversation"**

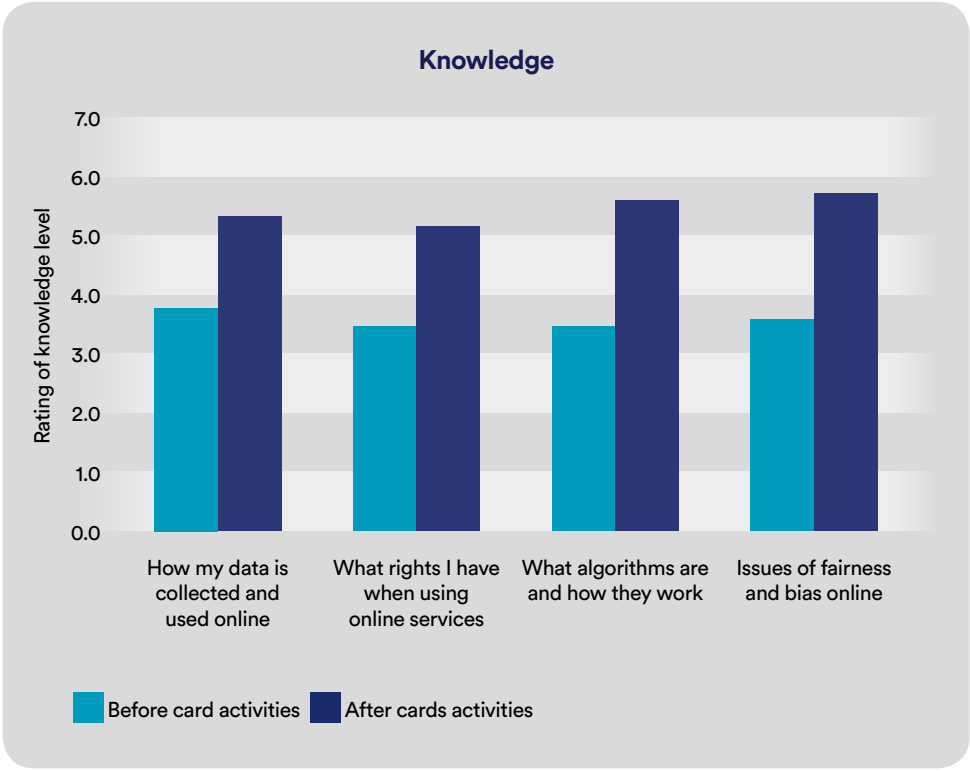


Figure 1: Graph showing the increase in self-rated knowledge before and after taking part in two sessions involving the Awareness Cards. A score of 1 = no knowledge at all in this area, whilst 7 = I am an expert in this area.

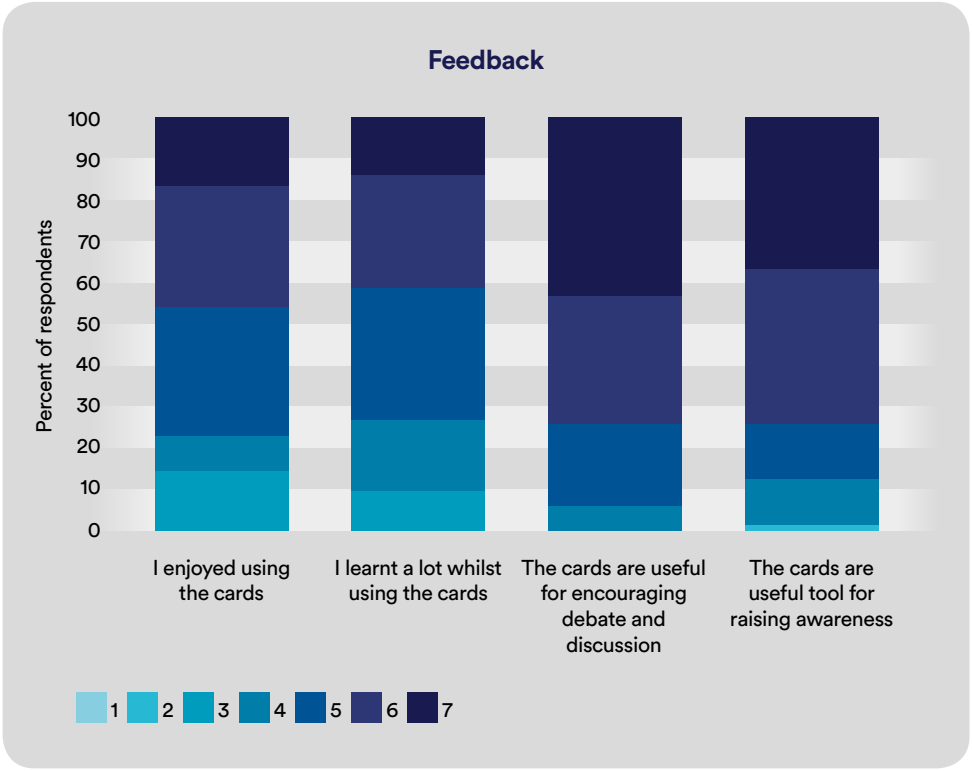


Figure 2: Graph showing the scores participants gave to statements relating to the Awareness Cards. A score of 1 = completely disagree, whilst a score of 7 = completely agree.

THE DATA GAME

Level of complexity:
Starter

Suits used:
DATA

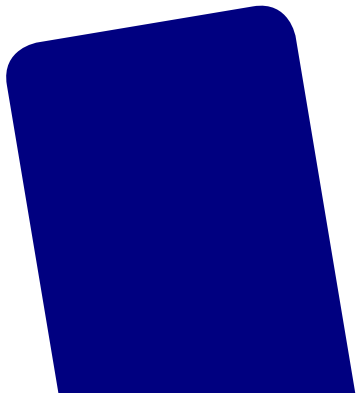
Number of players:
2+

Aim:
To encourage people to consider how algorithms may be used in their daily lives.

This game is a great starter activity to get people thinking about algorithms and how they operate.

How to play:

- The Facilitator asks each person in the group to identify one activity that they use the Internet for (e.g. shopping).
- Next, the Facilitator asks each person in the group to name a platform or website that enables them to carry out one of these activities online (e.g. Amazon). It does not have to be the activity they named.
- The Facilitator then lays out the *Data* cards onto a table and asks each person in the group to identify one piece of data that is shared with the platform or website when they go online for one of the activities. Again, it does not have to be the one they suggested (e.g. bank details).



THE MOTIVATION GAME

Level of complexity:
Starter

Suits used:
VALUES (RIGHTS FOR ADVANCED VERSION)

Number of players:
2+

Aim:
To encourage people to consider why they go online. The game is most suitable for those aged 60+

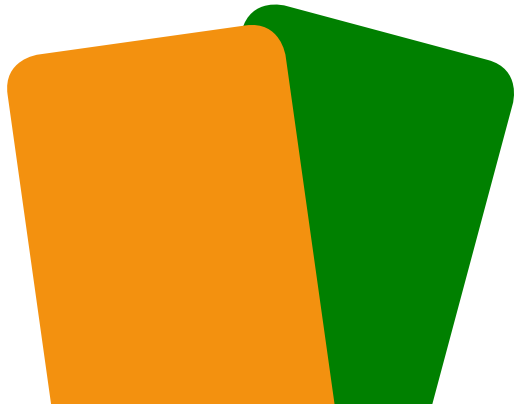
How to play:

- Shuffle the *Values* cards and deal equally to all players.
- Players take it in turns to say what motivates them to use the Internet, using the *Value* cards as inspiration. E.g. A player might pick the 'Problem Solver' (featured on the 'Science and Knowledge' *Value* card) as it may prompt them to think about how going online helps them to answer a tricky crossword puzzle.
- Players keep going around until they have used all the cards or covered their own motivations.

CHALLENGE

Next, deal out the *Rights* cards. Players should consider which of the rights are the most relevant or important to them, in relation to why they go online.

"I also found the motivation game a good social activity for older people"



FOUR OF A KIND

Level of complexity:
Simple

Suits used:
DATA VALUES

Number of players:
4

Aim:
For players to gather as many sets of four cards as possible.

How to play:

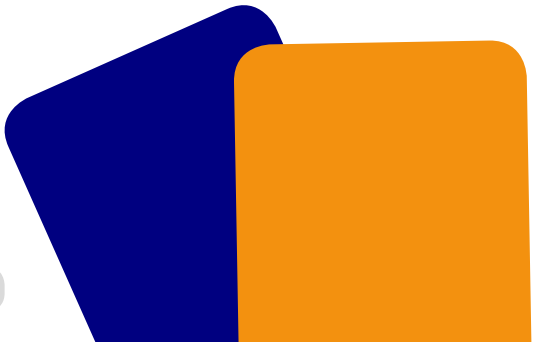
- Deal out cards amongst players
- Players take it in turns to point to a card in the hand of the player next to them (only the back of the card is visible).
- For the player to win their chosen card, the current owner of the card must say the title of the card (e.g. 'Personal Information').
- The player that selected the card must then provide two examples of this kind of *Data* or *Value* (they do not need to be the exact ones listed) to win the card.
- Once a player has acquired a set of four *Data* or *Values* cards, they can put them down in front of them. The player with the most sets of four wins!

EXAMPLE

Player A required a *Data* card to complete their set of four. They see that Player B next to them has a blue *Data* card in their hand. Player A selects this card. Player B then says 'Location' Data. Player B must then identify two types of location data to win the card.

CHALLENGE

The *Rights* cards can be added in, and players could be asked to think about what having these rights might mean.



TRUMPS

Level of complexity:
Intermediate

Suits used:
DATA EXAMPLE FACTORS
RIGHTS VALUES

Number of players:
3+

Aim:
To find as many links between the *Example* card and the rest of the cards.

How to play:

- The Facilitator picks an *Example* card and spends a few minutes reading it through and discussing it with the group. The *Example* cards cover a broad range of topics, so try to pick one that your group will find the most interesting.
- Shuffle and deal out the remaining cards amongst the players.
- Players take it in turns to pick one of their cards, placing it down on (or near) the *Example* card, and explain how and why their card is relevant to it.
- This game does not need to be competitive – other players can help each other out in finding connections between the cards, if required.

GUESS WHO?

Level of complexity:
Intermediate

Suits used:
DATA RIGHTS VALUES
(Play 1 suit per game)

Number of players:
2+

Aim:
For players to guess the mystery card through asking yes/no questions.

How to play:

- Lay the cards out so all the information can be seen by the players.
- One player selects a card but does not tell any of the other players which card they have selected (the player must not take the card away so they might need to take a photo of the content on the card if they are not familiar with it).
- The rest of the players take it in turns to ask the player a 'yes/no' question relating to the card. Facilitators may wish to adapt the game, for example, setting a maximum number of questions that can be asked.
- Once a question has been answered, the other players can then work together to eliminate cards from the game, by turning them over so that they are face down.

Some helpful hints for 'Yes/No' Questions are below:

- Is it about you personally?
- Is this about what you do on the Internet?
- Does this card include personal gain?
- Does this data change often?

To play with a bigger group: The game can be played in teams. Team 1 pick a card and answer questions posed by those in Team 2. This can also help younger age groups who might need more support with this game.

CHALLENGE

For a more advanced version of the game:

Yes/No questions must always provide **an example** relating it to the online world. E.g. if your card is related to 'Personal Habits', then you might say "Is your card relating to personal preferences? **For example** an algorithm that is programmed to take account of film interests to target cinema goers."

> **"It can help with learning different terminology and what they mean"**

DON'T SAY IT!

Level of complexity:
Simple

Suits used:
DATA VALUES

Number of players:
4+ players in 2 or more teams

Aim:
For players to guess the title of the card, without saying any of the bullet points below it.

This is a great warm up exercise to help players to learn the cards. Younger players may need extra support with this game.

How to play:

- Players take it in turns to pick a card from the top of the pile and describe the title to their team, **without** using any of the words on the card.
- Facilitator to adapt depending on the needs of the group- players may need to use some of the bullet points at the beginning, especially if they are unfamiliar with the cards.
- Players are given 60 seconds to guess. If the team does not manage to guess the title, then the card goes to the bottom of the pile.
- The team with the most cards at the end of the game wins!

CHALLENGE

For a more advanced version of the game:

Players are invited to draw the title of the card, as opposed to trying to explain it using the bullet points.

> **"It would be useful to learn the basic ideas of the cards and have a wider understanding of them. It would be very useful to learn the cards before you play a more complex game"**

PLAYING THE ALGORITHM!

Level of complexity:
Advanced

Suits used:
PROCESS RIGHTS VALUES DATA

Number of players:
2-4

Aim:
For players to design an algorithm and debate which of their cards are most applicable to it, without contradicting any of the group's *Rights* cards.

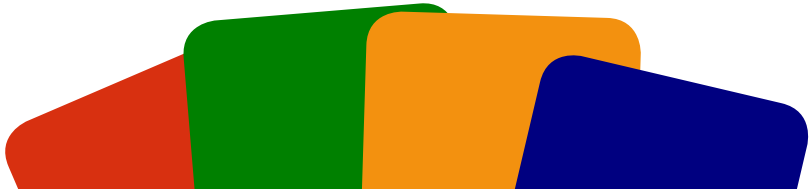
How to play:

- The group picks one *Process* card and two *Values* cards.
- They then work together to establish a theme using the chosen cards – E.g. The *Process* card – 'Spread a Rumour' along with the *Values* cards of 'Tradition' and 'Commerce' may lead to the theme of 'Millennials are killing the music industry'.
- Players are now tasked with creating their own algorithm that would serve this theme.
- Lay out all of the *Data* cards in front of the players. Players take it in turns to choose what data they think will help them to create an algorithm for this theme, laying each of their selected cards out in front of them until the cards are equally distributed. E.g. six cards for two players, four cards for three players, three cards for four players.
- Each player should now have their own set of *Data* cards that will fit into their algorithm that they are building for this process.
- Next, three *Rights* cards are picked at random and turned over one at a time. Players then look at their own and each other's *Data* cards to see if any of them would contradict the *Right*, and debate to cull/keep their cards! E.g., if a player turns over 'Disability Rights', the person with 'Health Records' would potentially then have to lose their *Data* card. The Facilitator should try to encourage players to think about what Data would stop their algorithm from abiding by the law.
- Next, debate whose algorithm is best!

CHALLENGE

For a more advanced version of the game:

Draw extra *Rights* cards to further the debate!



'SNAP!' VERSION 1

A **quick fire** game to help players to become familiar with the cards and to encourage players to think about the **links and connections** that can be made between the cards. Different versions are available, depending on the desired complexity and what the Facilitator would like to achieve using the cards.

Level of complexity:
Simple

Suits used:
DATA VALUES RIGHTS FACTORS

Number of players:
2-6

Aim:
For players to gather as many pairs of cards by finding links between them.

How to play:

- Shuffle the cards and deal equally amongst the players.
- Players take it in turns to put their card down (face up) to form a pile.
- Any player can shout 'Snap!' by placing their hand down onto the pile of cards. After shouting 'Snap!', the player has to find a link between the two cards in order to keep the pile.
- The Facilitator might need to act as a 'Judge' to decide if it is a valid link.
- If the player's reason is accepted, then they can put their winning pair of cards to the side and add the remaining cards from the pile to their hand.
- If it is decided that the player's reasoning for their 'Snap' is not sufficient, then the cards in the pile are divided amongst the other players.
- The player with the most pairs of cards at the end of the game wins!

CHALLENGE

Another player can challenge the rest of the group if they can find a **better link** between the cards!

‘SNAP!’ VERSION 2

Level of complexity:
Intermediate

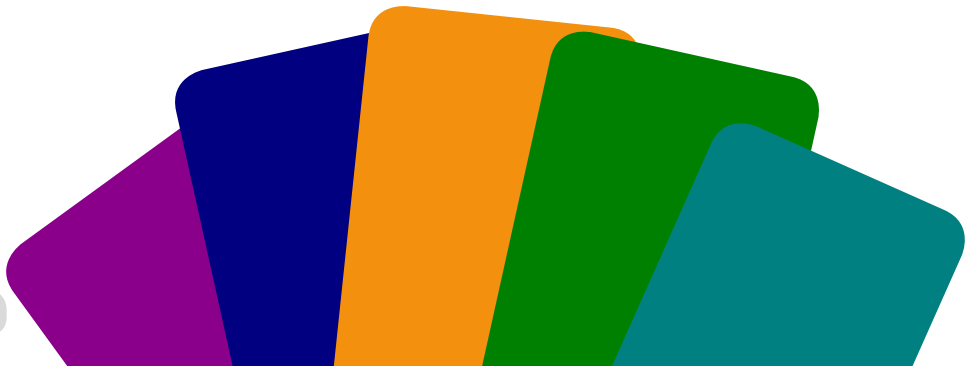
Number of players:
2-6

Suits used:
EXAMPLE DATA VALUES RIGHTS FACTORS

Aim:
For players to find as many links to the two *Example* cards as possible.

How to play:

- Facilitator picks two *Example* cards and reads them to the group.
- The *Example* cards are placed in front of the players, either side of the play area.
- Cards are shuffled and dealt out equally to all players.
- Players take it in turns to put a card down to form a pile, as above. In this version, a player can call ‘Snap!’ when there is a link between the top card and either of the *Example* cards. If the reason is accepted by the group, the card is placed under the relevant *Example*.
- Once the players have no more cards left, the cards in the pile can be split amongst the players for them to take another turn at applying them to the *Example* cards.
- There is no winner- but the game is used to discuss the Examples and to link the cards to a broader range of issues.



‘SNAP!’ VERSION 3

Level of complexity:
Advanced

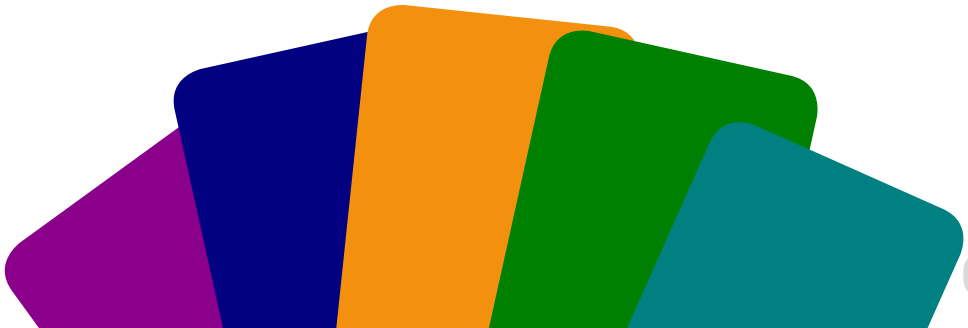
Number of players:
2-6

Suits used:
EXAMPLE DATA VALUES RIGHTS FACTORS

Aim:
For players to gather as many pairs of cards by finding links to their own *Example* cards.

How to play:

- Each person is given their own *Example* card. Players read out their *Example* to the rest of the group.
- Cards are shuffled and dealt out equally to all players.
- Players take it in turns to put a card down to form a pile, as above. Players are asked to ‘Snap!’ when they see a connection between the card on the pile and their own *Example* card. Players must give their reason for the ‘Snap’. If the reason is accepted by the group, then the player may put this card underneath their *Example* card.
- At the end of the game, players can discuss the *Example* cards and the connections made with the rest of their cards in more detail.
- The winner is the player who had the most cards underneath their *Example* card.



JUMBLE THE LINE

Level of complexity:
Simple

Suits used:
DATA **VALUES**

Number of players:
2-7

Aim:
For players to reflect on their online experiences through a fun, team based story telling activity. This is a fold-over story, like Consequences.

Resources needed:
A piece of paper for each player.

How to play:

- Each player is given a piece of A4 paper.
- Players are asked to write the following at the top of the page, '[Name] went online…'
- Each piece of paper is then folded over and passed to the player next to them. Players are then asked to write the answer to the statements/questions below. After each response is written, the paper is folded and passed along to the next player. Note, each response should be **one** sentence, and each player must write the responses to the same story the whole way through.
  - 'To… [e.g. go shopping, get a recipe].
  - What are the top 3 *Values* underlying what I am looking for?
  - What are the top three types of *Data* that I give when online?
  - This is what I found… [e.g. the service].
  - This is how it made me feel…
  - This is what I did next…
  - What advice would you give to other people because of this experience?
- During each round, the Facilitator may pick different cards from the deck to encourage players to think about different aspects of trust, fairness and bias when writing their narrative.
- Next, go around the room and read out the narratives!
- Facilitator to help players to reflect on aspects of the story to discuss how *Values* and *Data* impact on online experiences.
- Allow 15 minutes for game play and 15 minutes for discussion of learning.

CHALLENGE

Facilitators can add in another statement that asks, 'How might this have gone wrong?'

> **"Wide range of applications and game-players: stand-alone fun or opens into wide range of discussion topics around cards, problem solving through scenario"**

ALGO

Level of complexity:
Intermediate

Suits used:
PROCESS **VALUES** **FACTORS**
DATA **RIGHTS**

Number of players:
4-6 (can be pairs)

Aim:
For players to collect 4 cards that support their *Process* card.

How to play:

- Each player chooses a *Process* card at random and hides it from the other players throughout the game.
- Shuffle the remaining cards and deal out four cards to each player.
- Place the remaining cards in the middle.
- Players take it in turn to pick up a card from the middle.
- Players must then decide which of their cards are most suited to their *Process*, keeping the **four** most important cards in their hand. The remaining (fifth) card should then be discarded.
- The discarded card is placed **face up** to form a 'Discard' pile next to the main pile of cards. Players may pick up cards from their main pile or the 'Discard' pile.
- Play until all the cards from the pile in the middle have been picked up.
- Once all the cards from the middle have been picked up, players must reveal their hand of cards along with their *Process* card, and debate which player's cards are most suited to their *Process*, until a winner is declared!

Rules:

- Players **always** need **4** cards in their hand.
- Players can only have **a maximum of 2 cards** of the **same suit** in their hand at the end of the game.

CHALLENGE

Players could also talk about which cards they discarded, or any cards that they would have liked to have collected.

> **"Really gets you thinking about how algorithms are set up and work"**

THE DECIDING FACTOR

Level of complexity:
Simple

Suits used:
FACTORS DATA RIGHTS VALUES

Number of players:
4 (or 4 teams)

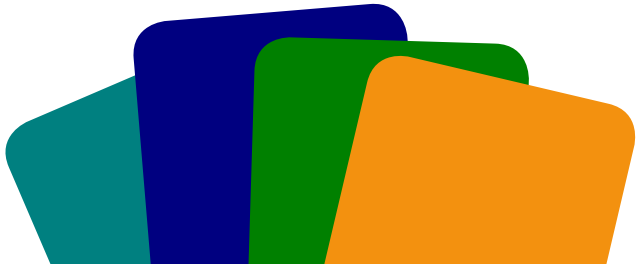
Aim:
For each player to discard as many cards from their hand as possible by relating it to their *Factor* card.

How to play:

- Each player is given a *Factor* card but must keep it secret from the others.
- Shuffle the remaining cards and deal out equally to all players.
- Each player must select **up to** 3 cards that are relevant to their *Factor* card and put face down in front of them.
- Next, each player picks a card from the hand of the player next to them. If the card is relevant to their *Factor*, they must place it face down in front of them. If the card is not relevant to their *Factor*, then they must add it to their own hand.
- Every player takes a turn until a round is completed.
- At the end of a round, if more than one player has an empty hand, those players each take one more card from another player.
  - If more than one player can play their card, this process is repeated.
  - If **only one** player can play their card, then the game moves to the next stage.
  - Otherwise, the game resumes as normal.
- At the end of a round, If only one player has an empty hand, in order to win they must show their set of relevant cards to the remaining players and **justify** their choices, showing clear links between their *Factor* and the rest of the cards.
- If there is disagreement amongst the team about any of the particular links between the cards, those card/s must be picked up again and the game resumes until there is a winner!

HINT

It might be useful for the Facilitator to have a practice run to show how links can be made between the cards, and to help players to think about algorithm and how they may operate.



A STORY TELLING GAME

Level of complexity:
Advanced

Suits used:
FACTORS DATA RIGHTS
EXAMPLE PROCESS VALUES

Number of players:
4

Aim:
To help players to collaborate to put together a story around the cards selected.

How to play:

- The Facilitator picks and reads out an *Example* card, which they think would be of most interest to their group.
- Separate all suits into piles.
- A player picks a suit and turns over the top card. The player must then start a story based on this card. The story can be fictional or real, and must be related to the *Example* discussed.
- Players take it in turns to turn over the top card of a different suit, and add something to the story, using the card as a guide. Note that if the player cannot find a link to the story using the card, they may discard it for another. The Facilitator may wish to help players to add to the story by asking them to consider particular issues that they consider to be pertinent to the theme of the story.
- Once a card from every suit has been turned over, these can be removed and placed above the piles. The story can then be continued with a new card from each suit.
- The game ends once the group feels that they have exhausted the links between the cards, or finished the story. One or two rounds works the best to keep the game moving. It might be useful to decide at the beginning how many rounds to have, so that the story can be guided towards a conclusion.

> **“Creative and flexible and easily adaptable for all groups”**

RUNNING A WORKSHOP: ADVICE

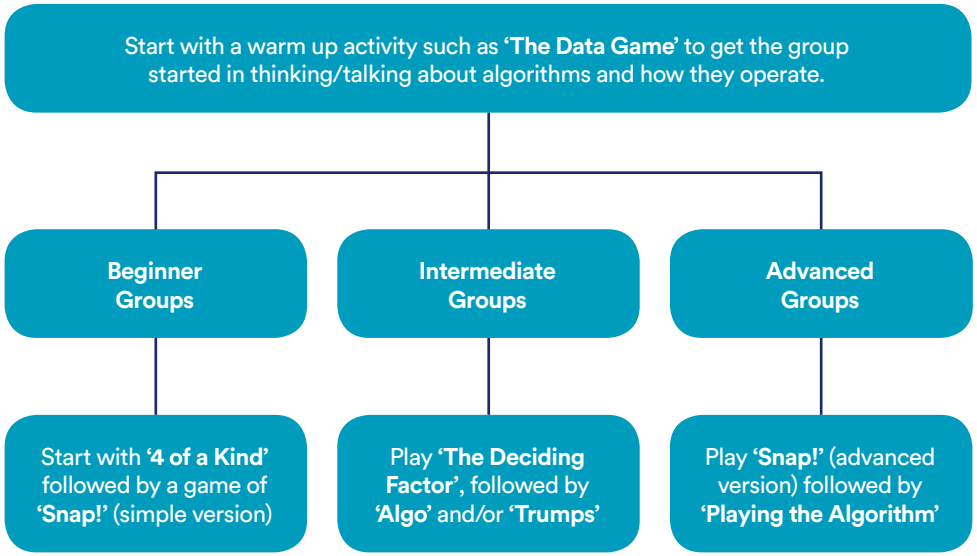
Have a starter activity or ice-breaker that helps your group to start thinking about algorithms and how they might be affected by them.

- We suggest that Facilitators familiarise themselves with the pack of cards, or the suits that they will be using, prior to their workshop.
- Allow time for a really clear introduction to the cards (or the suits of cards that you will be working with in the session).
- Be on hand to explain any tricky words as some participants may find some of the words included in the cards to be complex.
- School aged groups prefer quick fire games such as 'Snap!', and games where there is a winner.
- Be aware that some people may require extra time to familiarise themselves with the cards, especially if they are not familiar with the concept of an algorithm. If it is possible to run the activities over two sessions, then this may help some groups to absorb the information.
- For older adults, we have found that one or two exercises or games will generate enough discussion for a whole two hour workshop, once time to introduce the cards is allowed for.
- Using an *Example* card can help to frame the discussion and introduction to the cards.
- A *Process* card can be easily used with any age group to help to get people using/familiarising themselves with all of the cards.
- Give people time to ask questions!

If you enjoyed engaging with your group on issues of fairness, trust and bias in algorithmic systems, and you would like more inspiration to run future workshops on these topics, please see our Open Educational Resource: uyj.wp.horizon.ac.uk

RUNNING A WORKSHOP: SESSION PLANS

Below are suggestions for how to run a full workshop using the Awareness Cards, according to the level of ability that the group may have.



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