

Transforming Data - Student Worksheet

Part A: Introduction - Data is the new bacon

1. Read the Thought Starter below - what do you think it means?

Thought starter: “Data is the new bacon - there is literally an unhealthy obsession with data right now”.

2. As a class, you are now going to watch a video about photographic artist Chris Jordan and how he uses data to send powerful messages to the public.

What stood out to you the most in the video/photos?

How did these images make you feel?

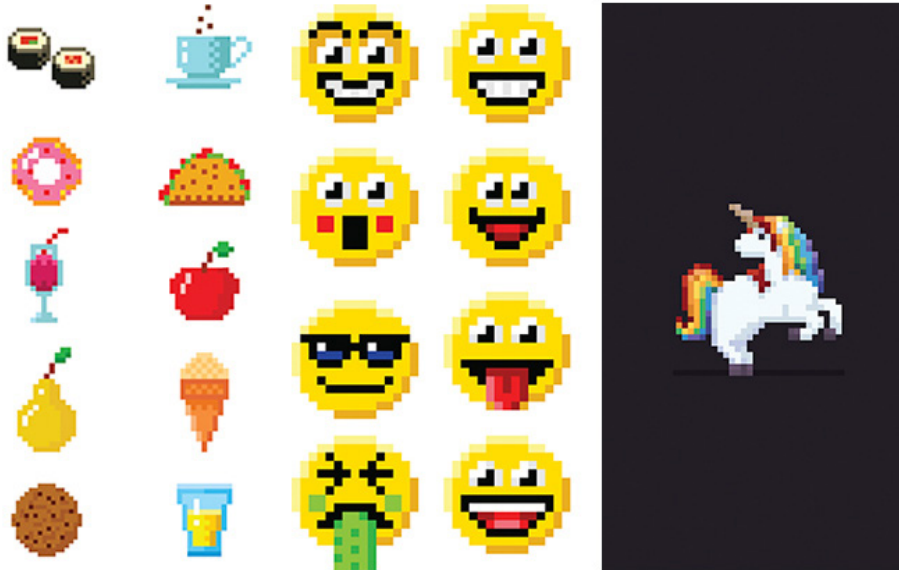
What do these images make you think about?

Can you explain how the data has been transformed by these photographic artworks?

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Part B: Transforming Data

1. Have a look at images below:



These images are representations of pixel art. Perhaps you have seen these before or even created your own pixel art.

2. Read the information box below on feral cats in Australia:

Real World Issue: Feral Cats in Australia

About: Feral cats are found across 99.8% of Australia in virtually all environments and are responsible for the extinction and endangerment of many native Australian species.

Statistics: Feral cats in Australia have contributed towards the extinction of 20 native species and are implicated in another 8 mammal extinctions. These cats are estimated to be killing up to 75 million native animals every day and putting additional pressure on 124 endangered Australian species.



Other: Feral cats are killing lizards, frogs, mice, small mammals and marsupials including bilbies and bandicoots, birds and insects.

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3. Now, as a group, you are tasked with creating a pixel art image using multi-coloured post-it notes to represent the feral cat issue in Australia. Use the following suggestions to guide your creation:

- Decide on which statistic/s you will be using in this image. You can just focus on one.
- Your statistic should be represented by the number of post-it notes you use (e.g. 1 post-it note represents one species that is endangered by feral cats).
- Decide on an image to create to match your chosen statistic (e.g. a cat's face).

Use this table to plan your artwork:

Pixel Art Name:	
Chosen statistic:	Rationale of artwork: (Give details as to what your artwork will represent)

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Create a sketch of your artwork here:

A blank sheet of graph paper featuring a uniform grid of squares. The grid consists of 15 columns and 20 rows, creating a total of 300 small square units. The lines are thin and black, set against a white background. There are no margins, text, or other markings on the page.

4. Now, grab your post-it notes and start decorating a wall of your classroom. Don't forget to add an extra post-it note (or two) to the bottom or side of your artwork to explain the rationale.

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PART C: Project- Sending a message through art

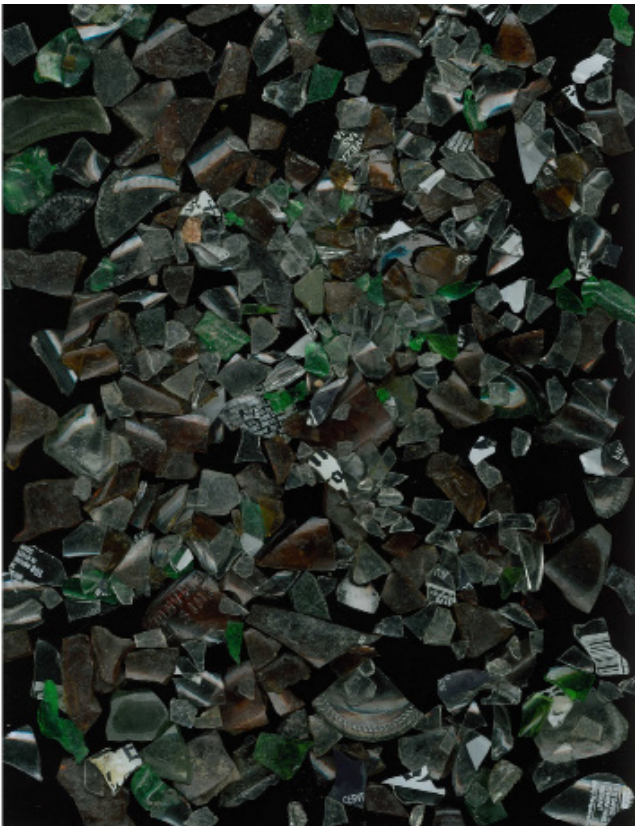
In this section of the lesson you are going to complete a similar task to that of Part B, but this time you will conduct your own investigation and share findings in your own creative way.

1. The first task is to think about the topic for your investigation: Litter in Australia. You will need to design an investigation that collects information on this topic and is able to be transformed into a powerful artwork. For inspiration on this topic, have a look at the stimulus items below:

Item 1. Quote

"Any harm done to the environment is harm to humanity" - Pope Francis.

Item 2. Image



Photographic art by Indigenous artist Tashara Roberts who wanted to capture the natural beauty of Lake Eppalock in Victoria but was confronted with the vast quantities of litter in this natural habitat, causing her to change the focus of her artwork.

Source:

<https://www.abc.net.au/news/2017-11-30/indigenous-artist-turns-litter-into-art/9202864v>

Item 3. Statistics

Litter is everywhere in Australia. Imagine a space as large as a tennis court. The least littered areas in Australia will have 5 pieces of rubbish within this space, whilst the most littered locations will have approximately 20. If we imagined a space as large as a football field, these numbers would triple, and continue to multiply every time we imagine a bigger space. And if this rubbish is plastic, metal or glass, it could remain there for the next 50 years, 100 years, 200 years, or even longer.

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2. Now it's time to design your investigation. Use the prompting questions in the table below to help you plan out your ideas:

Topic:	
Location/s:	
Variable: (i.e. what are you going to be collecting?)	
Variable type:	
How will you collect this data?	
How much data will you need? (i.e. how many people? how much space?)	
How will you use your data to make projections? (e.g. I will multiply the average of my sample by the school size to make projections for the whole school)	

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3. Now you can start collecting data. Use the space below to draw up a data table, or a survey in which to store your data. You may also need to prepare survey questions or other relevant tools before you can collect data.

What other information do you need to collect in order to complete your investigation? These extras may include the dimensions or area of the your chosen location, or the number of students/staff at your school. Include these important numbers below:

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4. In this next step, you will need to analyse and manipulate your data in order find a focal point statistic to use in the artwork. To complete this section you will need to examine your data closely, and consider using the following mathematical skills:

- Calculating an average (or median and mode).
- Calculating the area of your chosen location.
- Finding percentages.
- Adjusting your data for error, outliers or discrepancies.
- Making projections for size and time frames (i.e. using your average to make projections for a whole area or population).

In order to understand what tasks you need to complete in this section, try thinking about the rationale you will write for your upcoming artwork. If you understand what each element in your artwork will represent, you should have a better idea of what calculations you need to complete. -

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5. Now it is finally time to create your artwork! Your art must convey the data you have collected in your investigation to send a powerful message about littering in your school or local area. Your artwork can take a number of forms including:

- Pixel art.
- Photographic mosaics (as you saw in Part 1 by Chris Jordan).
- Pointillism, which is similar to pixel art but using dots instead.

Create a sketch of your artwork in the space below and make a list of the items you might like to use in your artwork:

List of materials:

Ask your teacher to double check your plans, and then you can start to create your masterpiece!

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Reflection

1. Think about the traditional ways in which we usually present data, such as graphs, charts and reports. Compare these to the artworks you created in the last section. In terms of defining and communicating an issue, list the strengths and limitations of each in the table below:

Data presentation	Strength	Limitations
Graphs and charts		
Written reports or articles		
Artworks		

Which method of data presentation (graphs, reports or art) do you think is the most effective at communicating an issue? Describe your answer:

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2. Have a look at the quote below by Chris Jordan who is the photographic artist you learnt about at the beginning of the lesson.

“ ... the information that we have to work with, these gigantic numbers... in the millions, in the hundreds of millions, in the billions and now in the trillions... And these are numbers that our brain just doesn't have the ability to comprehend. We can't make meaning out of these enormous statistics. So that's what I am trying to do with my work, is to take these numbers, these statistics from the raw language of data and to translate them into a more universal visual language that can be felt... because if we can feel these issues more deeply, then they will matter to us more than they do now.”

What is your opinion? How can art play a pivotal role in communicating the issues that matter?