

# Y5 Exploring our world 1 - introduction to data science, statistics & Dollar Street

NEW June 2024

Year level: 5

Statistical focus: Summary investigations

Approximate number of lessons: 2

## Learning goals

- Introduction to data science and statistics
- Finding out about Dollar Street, New Zealand Census and CensusAtSchool websites
- Introduction to Dollar Street
- Finding out about the \$ values
- Finding out what variables Dollar Street collects
- Learning about attributing photographs from the internet

## Resources

- Video: [Superpower: Data science skills](#)
- Websites: [Dollar Street](#) | [New Zealand Census](#) | [2018 Census](#) | [CensusAtSchool](#)
- TED talk about Dollar Street [See how the rest of the world lives, organised by income](#) | [Anna Rosling Rönnlund](#)

## Activity - Lesson 1

### Introductory video

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Play the [Superpower: Data science skills](#) video to the class. The video is 5:46 mins.

Following the video, ask students to share what jumped out at them about the video. If the following ideas don't come up, you might like to use the questions below to elicit information about the ideas.

- How is the data presented on Dollar Street? *Dollar Street uses photographs of many categories about people's homes.*
- The video talked about two censuses. Can you tell us what the two different censuses were? *National census and CensusAtSchool.*
- Name a tool that Rachel uses in her job to analyse data? *Google analytics*

## Exploring the websites mentioned in the video

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Explain to students that they will now get an opportunity to explore one of the following three websites

- Dollar Street
- New Zealand Census
- CensusAtSchool

Tell them they will have time exploring their chosen website with a view to sharing with the class about the website.

1. Split students into small groups of 2-3 students.
2. Groups decide on which website they will explore and spend 10-15 mins exploring the website. They might like to make notes about interesting things they want to share with the rest of the class during this time. This could be done in an electronic document so they can capture the weblinks as well.
3. Groups that looked at the same website gather together and collectively decide on three things to share with the rest of the class. They prepare a short three slide presentation and nominate one person to present on behalf of the larger group (10-15 mins).
4. Presentations are given by each of the three website groups to the rest of the class (allow up to 5 mins for each group).

## Notes for teachers

### If students get stuck

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Here are some starter prompts below to get groups moving again if they don't know what to do

#### Dollar Street

- Click on the "Families" button, what happens..., what can you do now...
- Click on "The World" button, what happens..., what can you do now...
- Click on the three lines (top right hand corner)
  - Select "map" what does this tell us
  - Select "about" what does this tell us

#### New Zealand Census

Depending on when you are doing this activity will depend on how up to date the 2023 Census materials are. In June 2024, at the time of writing, there was not anything useful there to work with. Recommend using the [2018 Census](#) materials until then.

- Scroll down until they find 2018 Census place summaries, click into these
  - Select your region..., what do you see, what information is available
    - Select more data and information (left hand menu in the regional pages)

- Select Census map gallery, what is here, explore the maps e.g. explore population change between 2013 and 2018 census
- Click on the tabs to see changes (Regional council, TALB, SA2)

### CensusAtSchool

- Click on data
  - Select download or explore a sample, what happens, what can you do now...
  - Select explore the whole database, what happens, what can you do now...
  - Explore the different questionnaires, find survey questions that you like

## **Where are we heading**

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From session 2 we will be exploring Dollar Street and using the data from there. This introductory session can potentially ignite “ideas” for this exploration.

### About Dollar Street

Dollar Street was invented by Anna Rosling Rönnlund at Gapminder. For 15 years she spent her workdays making global public data easier to understand and use. Over time her frustration grew: carefully selecting data to present it in colorful and moving charts made overall global trends and patterns easier to understand. But it did not make everyday life on different income levels understandable. Especially not in places far from home. *“People in other cultures are often portrayed as scary or exotic.”* Anna explains: *“This has to change. We want to show how people really live. It seemed natural to use photos as data so people can see for themselves what life looks like on different income levels. Dollar Street lets you visit many, many homes all over the world. Without travelling.”*

<https://www.gapminder.org/dollar-street/about?>

## Activity - Lesson 2

### Introduction

Play the [TED talk about Dollar Street](#) [11:41 min].

Ask students to write down things that interest them or they are curious about as the talk goes along. Explain that we will be sharing these ideas after the TED talk.

Once the TED talk is completed, get the students to share with a partner and then with a larger group things that were of interest to them from the TED talk and capture the ideas that come up through electronic or paper mediums. These might be ideas that can be explored in the statistics investigation.

### Initial exploration of Dollar Street

In this part of the session students have time to freely explore Dollar Street by “visiting” three or more families from different parts of the street. The aim is for students to start to familiarise themselves with what information (data) is available for each family and to think about what they might like to investigate further across many families.

#### Family 1 (allow plenty of time for this first family)

Working in pairs or groups of three, pick a family from Dollar Street.

- Students can stroll down the photos to pick a different family from the ones that first show up.
- They should note where on Dollar Street their family is, what the \$value is and what country the family is from.

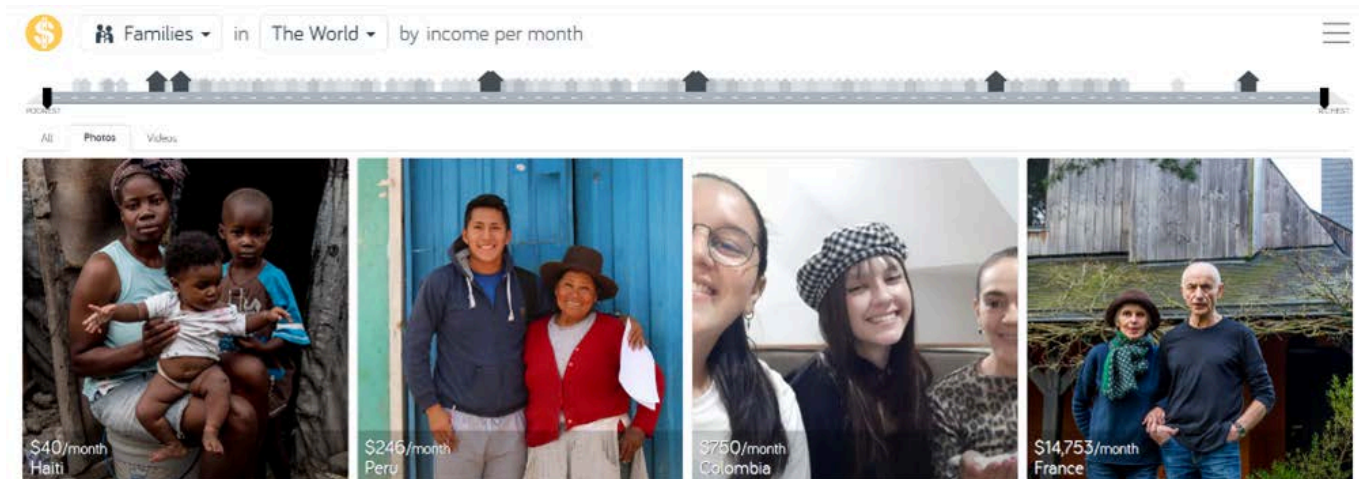


Figure 1. Dollar Street

Screenshot is from *Dollar Street* <https://www.gapminder.org/dollar-street> and is licensed under [CC BY 4.0](#), no changes have been made to the images

How is the \$value calculated - see [DS FAQ](#) to find out more.

- Click on the family photo (see Figure 2).

For example if the second family in the top line is selected, the following information comes up.



**Figure 2. Martinez Garamendi Family, Peru**

Screenshot is from *Dollar Street - Martinez Garamendi, Peru*, no changes have been made to the images <https://www.gapminder.org/dollar-street?active=5f42e883ebd73b774879ca1b> and is licensed under [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/).

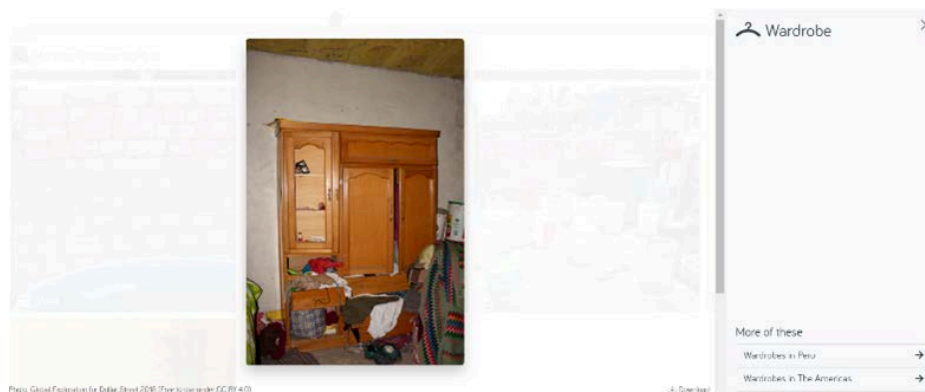
- Now click **Visit this family** link which is above the map.



**Figure 3. Some of the photographs for the Martinez Garamendi family**

Screenshot is from *Dollar Street - Martinez Garamendi, Peru*, no changes have been made to the images <https://www.gapminder.org/dollar-street?active=5f42e883ebd73b774879ca1b> and is licensed under [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)

- Get students to write down what they notice about the family and what they wonder about the family and other families.



**Figure 4. The wardrobe of the Martinez Garamendi family**

Screenshot is from *Dollar Street - Martinez Garamendi, Peru*, no changes have been made to the images <https://www.gapminder.org/dollar-street/families/martinez-garamendi?topic=families&active=5f41b476ea93f2aa581b3b21> and is licensed under [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)

**Noticings** are things they see in the photographs, e.g., they might notice that the family has a wooden wardrobe with doors, drawers and a mirror, that the everyday shoes include jandals and sneakers, that the ceiling is brick, and that they have a number of cooking pots.

**Wonderings** are things they wonder about that might not be in the photographs, e.g., they might wonder if other families in Peru have the same type of wardrobe (everyday shoes, kitchen, bed or any of the many variables photographed), or they might wonder how the wardrobes for families of the same income level compare, they might wonder if families higher up the street or lower down the street have similar or different wardrobes. Students might wonder how this family compares with others in Peru, The Americas, or The World (see Figure 4 for links to these options).

Spend about 5-10 minutes exploring this first family. Encourage the students to write a short paragraph to describe what they can about this family from the photographs. Get them to imagine they are writing a letter to a friend, grandparent, or sibling about what they have found out.

Capture some initial ideas from the class, this may help others who were not sure what to look at or what to wonder.

### **Family 2**

Pick another family from a different part of the street. For example, if they started with a family in the middle of the street they could pick a family higher up or lower down the street. They should repeat the exploration for the second family similar to what they did for the first family, writing a paragraph about the family. At the same time, they might start to wonder what is similar and what is different between the two families

### **Family 3**

Pick a third family from a different part of the street to the previous two families. Before they look at the family in detail, get them to make a guess about what they might find using ideas from their previous two families. For example, will the kitchen be the same, how will the cutlery be stored, how many children...

Explore this third family, writing a paragraph about the family. Think about what is similar and what is different to the other two families.

## **Reflection**

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Get each student to write down two statements. Statement 1 is about what they noticed across the three families, and statement 2 is about what they wondered about all families in regard to their noticing.

They should choose the noticing that was the most interesting to them.

E.g., I noticed that the kitchens of my three families were very different, the higher the family on Dollar Street, the more elaborate their kitchen is. I wonder if families of the same income level have similar kitchens. Or I wonder if families from the same country have the same kitchens?

*Capture students' noticings and wonderings on paper and post them on the class wall. There may be ideas for exploration in these noticings and wonderings.*



## Notes for teachers

Before you get your students to explore Dollar Street, do the exploration yourself so you have a feeling for how the website works. Can you:

1. Visit the family
2. Look at different variables
3. Look at different countries
4. Find the photos of kitchens for many families.
5. Find out how the \$ value is calculated. (see [DS FAQ](#))

You might like to capture the stories about one of the families that the student groups explore with a photograph of the family. This could be through a table in google docs, using google slides or by hand with a printed copy of the family photo. It is good to introduce the students to attributing materials downloaded from the internet. All of Dollar Street's material is CC BY 4.0.


Dollar Street photographs are able to be used subject to the following Creative Commons License - Attribution 4.0 International (CC BY 4.0)

- You are free to
  - Share- copy and redistribute the material in any medium or format
  - Adapt - remix, transform, and build upon the material for any purpose, even commercially
- Attribution - you must give appropriate credit, provide a link to the licence and indicate if changes were made or not made.

For example

Description of the photograph with the link.

The photograph is from Dollar Street and is licensed under [CC BY 4.0](#), no changes have been made to the photograph

 <p><a href="#">Martinez Garamendi family from Peru</a> The photograph is from Dollar Street and is licensed under <a href="#">CC BY 4.0</a>, no changes have been made to the photograph.</p>	<p>The Martinez Garamendi family from Peru has 5 adults and 5 children living in their 3-bedroom house. Their kitchen consists of a free-standing oven with a shelf unit to store dishes. They don't have running water. Their front door is blue and is locked with a padlock. Their nicest shoes are a pair of Vans sneakers. Their pet is a dog. Their washing is done in buckets for both their dishes and clothes.</p>
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The photos and stories could be printed out and pinned to a world map.

On the top RHS Select MAP.

You will see where in the world all of the families have come from to date and the separate regions that you could compare.



Make sure ideas about what they wonder are captured as these can help with ideas for investigations that are started in the next session.

### If students get stuck

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Here are some starter prompts below to get groups moving again if they don't know what to do

- Where is your family from?
- How do you get in to “visit your family”?
- What does your family use as a toothbrush?
- What is their most loved toy?
- How many people are in your family?
- What do they use to cook their food?