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Economist

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A workshop from
The Economist Educational Foundation



HOME-LEARNING
VERSION

NUMERACY IN THE NEWS

*Suitable for use at home by young people or
with support from parents or guardians*

Introduction

PUBLISHED 23 MARCH 2020

These resources are designed to be used at home by a student working alone or with a parent or sibling/s. They will work particularly well if children work together or with parents, to get interesting discussions going!

They were produced by The Economist Educational Foundation, an independent charity that combines the journalistic expertise of *The Economist* newspaper with teaching know-how. Our mission is to help change young people's lives by giving them the skills to think and speak for themselves about current affairs. We specialise in enabling young people to have high-quality discussions about the news which develop their thinking and communication skills.

About this resource

Time Roughly 2–3 hours of work

Target age 9–13 years

Designed for individual or parent-supported at-home working

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Let us know about any interesting discussions you have!



@Econ_Foundation

#numeracyinthenews #econfoundation

#newsliteracy #homelearning #familylearning

Numbers in the news

Let's think about where we see numbers in the news.

STEP 1

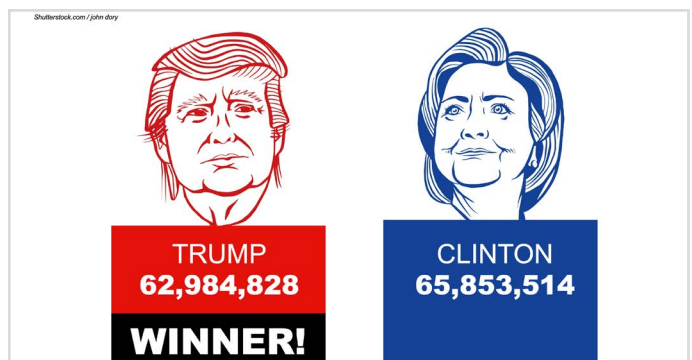
What numbers are you seeing in the news at the moment? Why are numbers important in the news? How do the numbers make you feel?

STEP 2

Look at the three pictures on the right

For each picture, answer these questions:

- What does the number tell you?
- Is it a big number?
- Is it an important number?
- Can you remember anything more about this news story?
- How does this number make you feel?
- What information is missing to help you understand it?



1. During the 2016 Brexit referendum, the Vote Leave campaign famously painted this claim onto a bus. It misled people to believe that an extra £350 million would go directly to the NHS if the UK left the EU.
2. It's estimated that over half a billion animals have been killed in the Australian fires which began at the end of 2019.
3. This is how many individual votes Hillary Clinton and Donald Trump received in the 2016 US election. You might find this confusing as Donald Trump won the election with fewer votes. This is because every US state acts like a kind of mini election. Whoever wins the most votes in a state, wins that state. To win the election, you need to win the majority of states, rather than individual votes.

Football numbers

STEP 1

Can you remember when the last men's and women's World Cups happened?
Do you remember watching any matches?

STEP 2

Look at the *Football data sheet*. This information is from FIFA World Cup reports or news articles from 2018 - 2019 and it tells us about the viewing figures and prize money for the most recent tournaments. What information is each section giving us? Answer the questions at the bottom of the sheet.

How are numbers chosen and presented to us? How do the numbers influence our thinking?

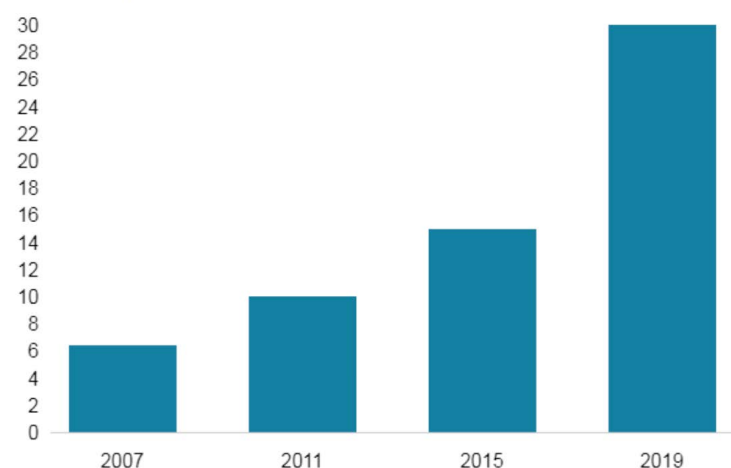
STEP 3

It's time to get creative! Make up your own newspaper headline from the numbers you have looked at.

FOOTBALL DATA SHEET

SECTION 1 GRAPH

Rising Women's World Cup prize money
Millions (\$)



Source: Fifa

BBC

SECTION 4 NEWS ARTICLE

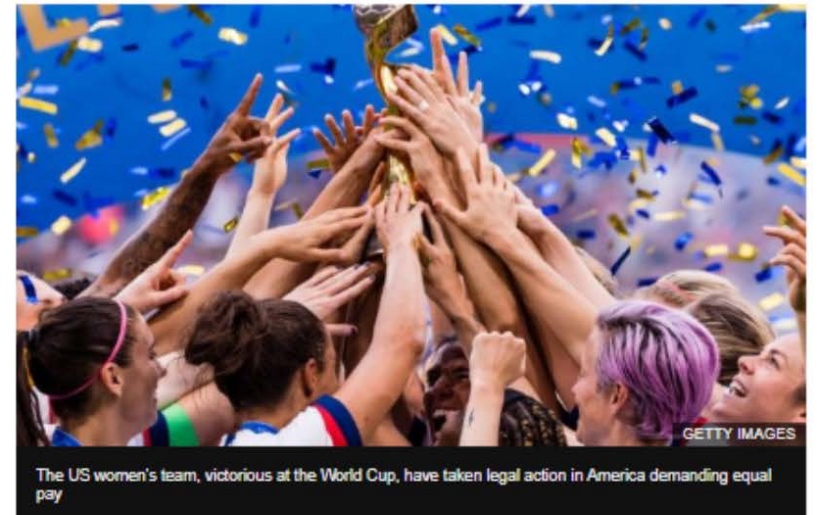
Women's World Cup: What is the pay gap?

By Reality Check team
BBC News

8 July 2019

f b t e Share

Reality Check



The US women's team, victorious at the World Cup, have taken legal action in America demanding equal pay

Demands for equal pay in football have grown louder following the successful staging of the Women's World Cup tournament in France.

With the US team triumphant, the crowd in the stadium chanted: "Equal pay! Equal pay!"

"I think we are done with the questions like 'are we worth it?', 'should we have equal pay?', 'American star player Megan Rapinoe said after the game. "Let's get to the next point of 'what's next?'."

Reality Check has taken a look at the prize money awarded at the men's and women's World Cups, and how that money is distributed.

How is prize money awarded?

The winning US team in France received \$4m (£3.2m), double the amount of the previous tournament in 2015.

The prize money given to other teams depended on how far they got, starting at \$750,000 (£590,000) for taking part in the initial group stage.

In total, Fifa awarded \$30m (£24m) to the competing teams in the women's tournament.

For last year's men's World Cup, the total prize money awarded was \$400m (£315m), more than ten times as much.

SECTION 2 INFOGRAPHIC (visual representation)

GLOBAL VIEWERS PER LIVE MATCH (IN MILLIONS)



SECTION 3 HEADLINE

France 2019 was the most watched
FIFA Women's World Cup ever,
reaching 1 billion people!

SECTION 5 TABLES

Men's World Cup Final 2018, viewers by region	Region	FWC Russia 2018	FWC Brazil 2014	% difference
	Africa & Middle East	537.0m	323.1m	+66.2%
	Asia	1,415.7m	1,526.5m	-7.3%
	Europe	661.3m	676.0m	-2.2%
	N. C. America & Caribbean	277.2m	321.0m	-13.6%
	Oceania	14.8m	17.6m	-15.9%
	South America	355.9m	326.6m	+9.0%
	GLOBAL TOTAL	3,261.9m	3,190.8m	+2.2%

Women's World Cup Final 2019, viewers by region	Region	FWWC France 2019 (20 minute reach)	FWWC Canada 2015 (20 minute reach)	Diff.
	Africa & Middle East	24.0m	12.0m	+100%
	Asia	152.2m	141.8m	+7%
	Europe	166.6m	70.5m	+136%
	N.C. America & Caribbean	77.8m	83.8m	-7%
	Oceania	2.3m	1.8m	+24%
	South America	117.8m	17.9m	+560%
	Global Total	540.6m	327.8m	+65%

2018 and 2019 FIFA World Cups, Global broadcast and audience summaries, FIFA

Comprehension Questions

- Which presentation of numbers is the easiest to understand?
- FIFA runs the World Cups. How might it want to present the information? Why?
- The BBC is a media organisation that wants to inform people. How might it want to present the information? Why?
- If we were having a debate about whether women should be paid equally to men, what evidence would you use for each side of the argument?
- Which sections might be misleading, if they were studied without the others?

ACTIVITY 3

This activity will use mathematics to help us think about different people's perspectives and experiences. Sometimes answers will be in British pounds and others in US dollars.

STEP 1

Think of at least 5 things that cost £2 or less, but they can't be food or drinks!

STEP 2

Answer the questions on the *Fraction and percentage question sheet*.
Do you think \$2 means the same to everyone?

STEP 3

Check out the GapMinder website: www.gapminder.org/topics/four-income-levels

Read through the information about the four income levels and look through the pictures for each level.

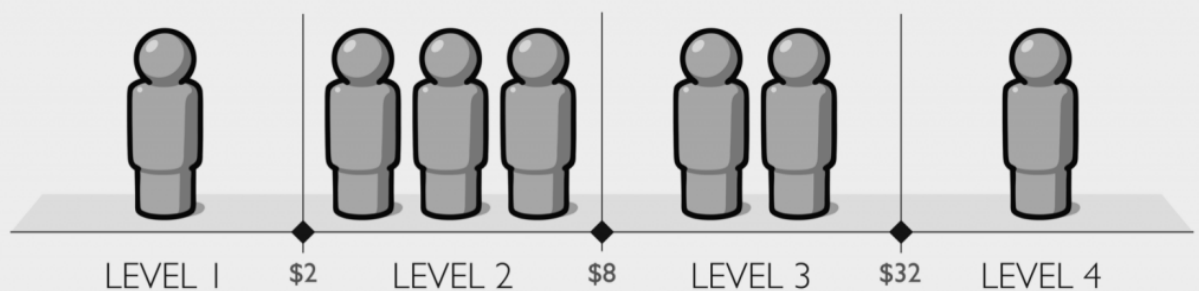
Answer these questions for all of the income levels:

- What is similar and different about their lives compared to yours?
- What challenges might this income level present?
- What don't we know? For example: the price of food for people on this income level.

Fraction and percentage question sheet

- 1 A person earns \$100 a day. They get a pay rise of \$2.
What is the % increase in their salary?
- 2 How much extra money will they earn in five days?
- 3 A person earns \$2 a day. They get a pay rise of \$2.
What is the % increase in their salary?
- 4 How much extra money will they earn in five days?
- 5 How do you think each person would feel about their pay rise?
- 6 A person who earns £1m a year must pay 40% in tax.
How much do they have to pay?
- 7 How much are they left with?
- 8 A person who earns \$10,000 is not taxed at all. Is this fair?
- 9 Look at the image below from GapMinder and answer the following questions:
 - a) How many people does each figure represent?
 - b) How many billions of people live on over \$32 a day?
 - c) What fraction of people live on level 2 income level?

The image below shows how many of the world's 7 billion people live on each Income Level (each figure represents 1 billion people).



Income per person in dollars per day adjusted for price differences.

Source: Gapminder[3]

Elevator answers

Presentation skills are really important. Think about the presentations you watch at school, from other students or teachers. What makes a good presentation?

How long does it take to ride an elevator up to the tenth floor of a building? Pretend that you get in an elevator with someone and they ask you a question. You only have the time it takes to get to floor ten to answer their question (let's imagine it's about 45 seconds).

STEP 1

Pick one of the *Key questions* to answer.

Prepare an answer to the question, to present to someone in 45 seconds. Use the data as evidence.

STEP 2

After you've prepared your answer, read the *Additional data* for your question. Do you need to adapt your answer? If so, take two minutes to do that!

STEP 3

Practise your answer and try to present it in front of someone.

After presenting, answer these questions:

- What new information did you learn from the additional data?
- Did your answer change when you read the extra information?
- Did any of the data make it difficult to decide how to answer?
- Is there any extra information that you need to answer the question?

Key questions



KEY QUESTION

Which country or area should we target a **climate-change** campaign at?

Bangladesh's
2017 carbon
emissions

88 MILLION
TONNES

China's
2017 carbon
emissions

9839 MILLION
TONNES

Saudi Arabia's
2017 carbon
emissions

635 MILLION
TONNES

Europe's
2017 carbon
emissions

5693 MILLION
TONNES

The Gambia's
2017 carbon
emissions

1 MILLION
TONNES

KEY QUESTION

Do countries spend too much on **space travel**?

National spend on space travel

COUNTRY	AMOUNT
USA	\$20 billion (2019)
India	\$1.4 billion (2019)
China	\$8.4 billion (2017)
Russia	\$3.3 billion (2015)

KEY QUESTION

Is **homelessness** a big problem in Camden, London?

Camden council's street-sleepers data

YEAR	NUMBER OF STREET SLEEPERS COUNTED
2015	15
2016	17
2017	127

KEY QUESTION

Are people moving away from eating **meat and dairy**?

OVER

370k

PEOPLE SIGNED UP TO
VEGANUARY IN 2020

PIZZA HUT'S VEGAN PIZZA
SALES WERE UP

50%

IN JANUARY 2020 COMPARED
TO THE PREVIOUS YEAR

Additional data



ADDITIONAL DATA

Which country or area should we target a **climate-change** campaign at?

Bangladesh's
carbon emissions
per person

0.5 TONNES

China's
carbon emissions
per person

6.8 TONNES

Saudi Arabia's
carbon emissions
per person

18.2 TONNES

Europe's
carbon emissions
per person

7.6 TONNES

The Gambia's
carbon emissions
per person

0.4 TONNES

ADDITIONAL DATA

Do countries spend too much on **space travel**?

US BUDGET 2019



SPACE FLIGHT AND RESEARCH
\$61 per person



NATIONAL DEFENCE
\$2,200 per person



COMMUNITY DEVELOPMENT
\$18 per person



ENVIRONMENT & NATURAL RESOURCES
\$130 per person



SCHOOLS
\$277 per person



HEALTH (INCLUDING INSURANCE)
\$3,939 per person

ADDITIONAL DATA

Is **homelessness** a big problem in Camden, London?

An investigation by HuffPost UK has shown the government's use of "snapshot" rough sleeper counts on just one night of the year in autumn are being used to provide data on the nationwide levels of homelessness, despite being unreliable.

In 2016, an investigation by local newspaper the Ham&High revealed data showing there were 601 rough sleepers in Camden in 2015. The newspaper's figures were compiled using information from Camden's Safer Streets team of outreach workers, giving an accurate picture of numbers found on the streets annually. The official figure from the snapshot count that year was 15.

EMMA YOULE, HUFFPOST ARTICLE, 2018

KEY QUESTION

Are people moving away from eating **meat and dairy**?

THE PRODUCTION OF
MEAT, MILK AND EGGS

increased

FROM
758 MILLION TONNES
IN 1990 TO
1,247 MILLION TONNES
IN 2017

The NHS

The National Health Service in the UK means that healthcare is free at the point of delivery (when it is given). To pay for this, some taxpayer money goes towards funding the NHS. However, for several years, the NHS has spent more money than it has received.

STEP 1

Fill in the blank or guess what these figures relate to in the NHS:

1. £115 billion
2. 47%
3. One million patients visit A&E every __ hours

What do these figures tell us about the NHS?

STEP 2

Have a look at the *Plan pack* on the following pages. There are three different options that could help the NHS. You must decide which one is the best idea.

Answer these questions:

- Which is the best option and why?
- What predictions have you made in order to decide?
- What problems might there be, other than the numbers?
- What don't we know / what can't we predict?

1. This was the NHS England budget 2018–19
2. The percentage of NHS trusts that spent more than they received 2018–19
3. One million patients visit A&E every 36 hours

PLAN PACK – OPTION 1

MOVING TO AN ONLINE GP APP

Everyone would use a mobile phone and computer app allowing most interactions with a GP to take place online. If you needed to see a doctor, you might video call them to chat instead. This would be more efficient.



HAS IT BEEN DONE?

Yes, but these apps are not compulsory. Babylon Healthcare, for example, allows you to switch to an online GP. You can have video calls with a doctor, use an AI symptom checker or be referred to an in-person doctor if your symptoms are serious.

SOME USEFUL NUMBERS

307.2m

APPOINTMENTS WERE
DELIVERED BY GP PRACTICES
ACROSS ENGLAND LAST YEAR

ONLY 22%

OF OVER 65s SEARCH FOR NEW
APPS ON APP STORES COMPARED
TO 70% OF 18-34s.

5%

OF APPOINTMENTS ARE
MISSED WITH NO NOTICE

£300m+

AMOUNT THAT UNNECESSARY
GP APPOINTMENTS COST THE
NHS EVERY YEAR

2 weeks

AVERAGE WAIT TIME
FOR A GP APPOINTMENT

PLAN PACK – OPTION 2

A TAX FOR JUNK FOOD

Obesity is linked to many health issues such as diabetes and heart disease. The government would add a tax on all junk food. This money would be used to fund more doctors and nurses or medicines, or to treat obesity-related medical conditions.



HAS IT BEEN DONE?

A “sugar tax” was enforced in April 2018. Drinks with lots of sugar in them were taxed so the companies making them had to pay the government money. The money is being used to fund sports in primary schools.

SOME USEFUL NUMBERS

£154m

HOW MUCH THE “SUGAR TAX”
RAISED IN 8 MONTHS

1/4 adults

ARE AFFECTED BY
OBESITY IN THE UK

28%

THE INCREASE IN THE
NUMBER OF TAKEAWAYS IN
SCOTLAND SINCE 2010

£27bn

THE COST OF OBESITY TO
THE WIDER SOCIETY

PLAN PACK – OPTION 3

EVERYONE HAS TO HAVE PRIVATE HEALTHCARE INSURANCE

People would have to pay for insurance so that when they get sick, the insurance company will pay for their treatment. A person without insurance would have to pay the full amount for any treatment.



HAS IT BEEN DONE?

Some countries like America mostly have a private healthcare system. In the UK, people can choose to have insurance and private treatment if they want to.

SOME USEFUL NUMBERS

27m+

NUMBER OF AMERICANS
WHO REMAIN UNINSURED—
THE MAJORITY OF WHOM ARE
POORER PEOPLE

18 weeks

MAXIMUM WAIT TIME FOR
NON-URGENT MEDICAL
TREATMENT ON THE NHS

£7 out of every £10

SPENT ON HEALTH AND SOCIAL
CARE IS SPENT ON PEOPLE
WITH LONG-TERM CONDITIONS

4 weeks

WAIT TIME OFTEN OFFERED
BY PRIVATE HEALTHCARE
PROVIDERS IN THE UK

Social housing

Social housing is housing where people pay less rent than normal and they can usually stay in their home for a long time if they want to. There are 4.1 million social housing homes in England and Wales. People who are most in need are given priority for social housing.

STEP 1

Read through the different *Voices* of people who might live in social housing. What were some of the similarities and differences between the people?

Many types of people rely on social housing and we can't make assumptions about those people.

STEP 2

Now look at the *Social Housing map* which shows the number of social housing applications, and the number of social housing homes available, in each area.

For each area:

1. Round to the nearest 10 for each number
2. Estimate the biggest gap between the waiting numbers and number of vacant places.

STEP 3

Read the *News article*. Do you think Bristol is the best place to build these social housing homes?

Ask yourself these questions to help develop your answer:

- Should we encourage people to move to other areas?
- What limitations do these data have? What else would we need to help us decide?
- Does the article tell us about the quality of living in these areas or the job opportunities? Why might this be important?
- How do numbers help us form opinions about news issues?



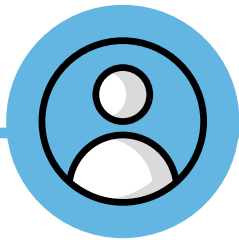
IF YOU WANT AN EXTRA CHALLENGE

Professor Esther Duflo was the joint winner of the Nobel Prize for Economics in 2019. She said to the BBC “there is a huge blind spot in economics” where we assume that people make decisions based only on money.

Here are some things that might affect our decision about where to live. Put them in order from most important to least important:

- Close to family
- Affordable
- Good job opportunities
- Pollution levels
- Familiar area
- Good schools
- Lots to do
- Low crime

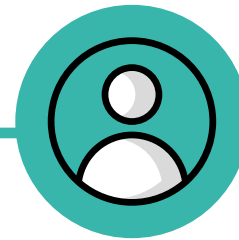
Voices



VOICE 1

I'm retired and live with my husband. We've lived and worked in this town our whole lives.

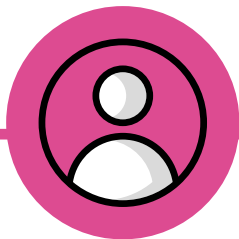
We don't have many savings and aren't able to move every few years so being a social renter means we can stay put!



VOICE 2

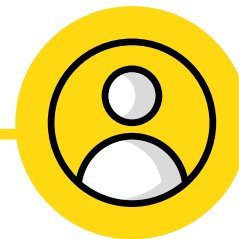
I'm a carer. My daughter has a severe disability which means that I need to be home with her most of the time.

As I can't work, it really helps to pay lower rent in social housing. It's also important for my daughter to live in a clean and regulated place.



VOICE 3

Both my partner and I work full time and we have two children. We live in London where private renting costs are so high - they've especially shot up in the last 10 years. Being a social renter means we can afford to live near our family, who help out with childcare while we are at work and in the school holidays.



VOICE 4

I'm 18 years old and really independent. I'm finishing an apprenticeship at the moment which means I'm not paid loads yet. Being a social renter means that I can live on my own in the area where I'm studying.

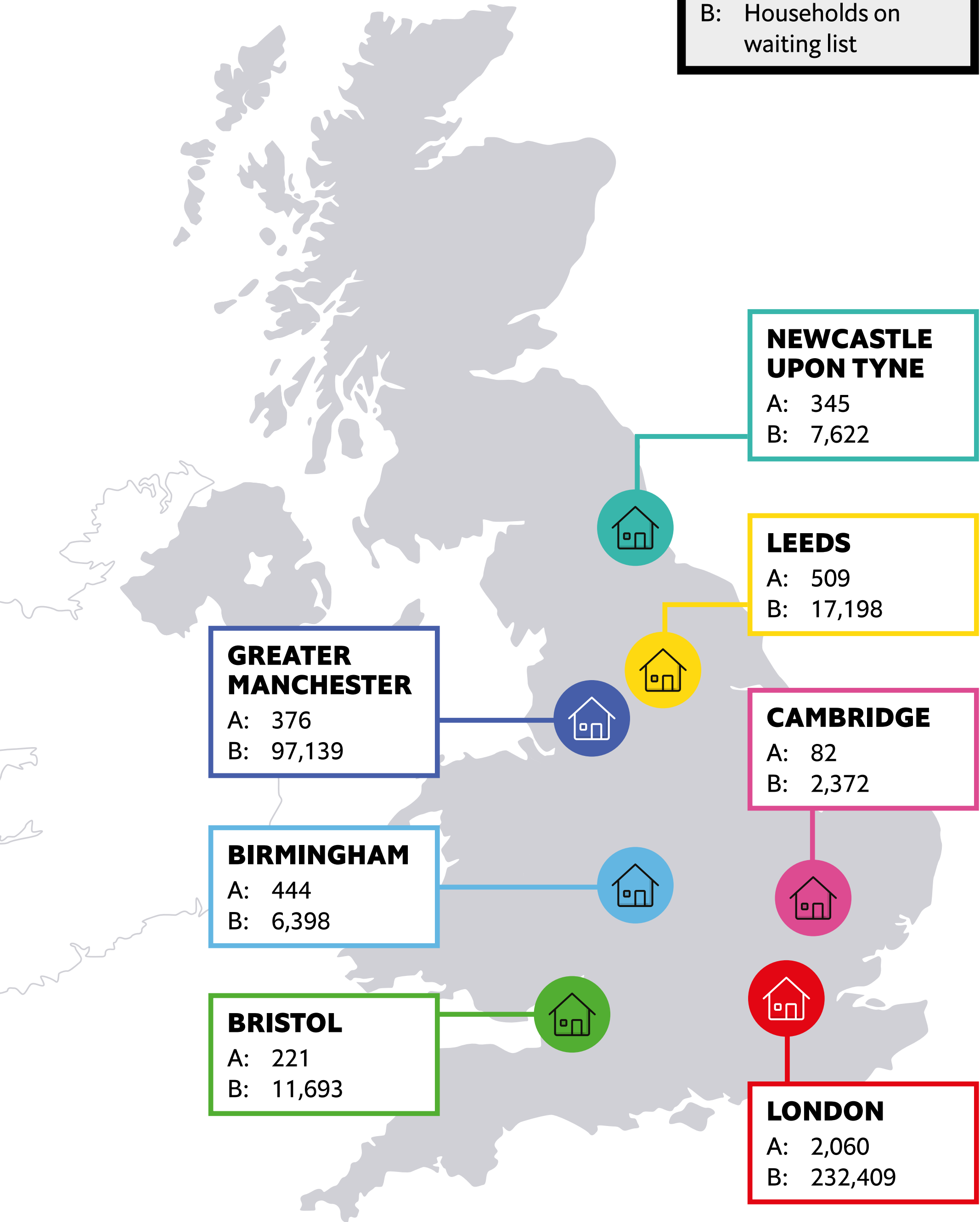
There wasn't much room for me at my Mum's, so this way I can support myself.

Social housing map

DATA FROM 2017-18

KEY

- A: Number of vacant, available properties
- B: Households on waiting list



DAILY NEWS

SPECIAL EDITION

ESTABLISHED 184

LONDON, UNITED KINGDOM

2020

1,000 NEW SOCIAL HOUSING HOMES TO BE BUILT IN BRISTOL

An area of Bristol has been selected for a boost to social housing. The South West city is set to add 1,000 social housing homes to its community.



Well done!

What have you learnt about numbers and the news?

What are you able to do now, that you couldn't do at the beginning of this activity?

Which activities did you enjoy the most?

Let us know on social media:



@Econ_foundation

#homelearning #familylearning



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