

Lesson 1 – Gathering Data

Introduction

Watch the animation on the Northern Ireland budget. Provide the pupils with the information sheet on the departments.

As a class or in groups discuss and answer the following questions:

- 1. What is the Northern Ireland Budget?
- 2. How many of the 9 different Government departments in the Executive can you name? (Any remaining departments that you don't name can be found using the link <u>Government departments | Northern Ireland</u> Executive)
- 3. What does AERA stand for?
- 4. Can you complete the table by inserting the name of the correct department beside the area of budget responsibility? (Blank tables can be given to each pupil to fill in. A copy has been provided at the end of the lesson.)

Which department will cover the cost of?
Fixing potholes
Teachers' salaries
Woodland grant schemes
Museums and libraries – free to the public
Translink bus pass for over 60s
School building repairs
Recruitment of 1000 new police officers
Campaign to promote tourism in Northern Ireland
Apprenticeship scheme for young people
Pay increase for doctors and nurses
Building a new sports stadium



The overall budget for year 2024–25 was £15 billion, divided between the 9 departments. Discuss how much you think each department might have been given from the overall budget.

The actual allocation to each department is given in the table below. (Give each pupil a copy of the actual distribution to each department. A copy has been provided at the end of the lesson.)

Department	Budget allocated for 2024–25	
Health	£7.7 billion	
Education	£2.9 billion	
Justice	£1.3 billion	
Communities	£856 million	
Economy	£767 million	
AERA	£577 million	
Infrastructure	£559 million	
Finance	£208 million	
The Executive Office	£183 million	
Total	£15 billion (rounded to the nearest billion)	

Pupils should compare their allocations to the actual allocations.

5. Do any of the actual allocations surprise you and if so why?

Using the information in the table also discuss and answer the following questions:

- 6. Which department gets the biggest budget? Why?
- 7. How much has the Department of Education been allocated? Why is Education the second biggest spending department?



Answers

1. The money required to operate public services in Northern Ireland – hospitals, schools, the education service, road building and maintenance, policing, etc.

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2.	Department
	Health
	Education
	Justice
	Communities
	Economy
	AERA
	Infrastructure
	Finance
	The Executive Office

3. Agriculture, Environment and Rural Affairs

4.	Which department will cover the cost of?		
	Fixing potholes	Infrastructure	
	Teachers' salaries	Education	
	Woodland grant schemes	Agriculture, Environment and Rural Affairs	
	Museums and libraries – free to the public	Communities	
	Translink bus pass for over 60s	Infrastructure	
	School building repairs	Education	
	Recruitment of 1000 new police officers	Justice	
	Campaign to promote tourism in Northern Ireland	Economy	
	Apprenticeship scheme for young people	Economy	
	Pay increase for doctors and nurses	Health	
	Building a new sports stadium	Communities	



- 5. Each group/pupil will have their own answers.
- 6. Health It is seen as the most important department. Everyone uses health services. Health also includes social care. It has the most running costs.
- 7. £2.9 billion. It is seen as the second most important department. Like health, education is a service used by all. It has the second most running costs.



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Teachers' salaries		
Woodland grant schemes		
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Total	£15 billion (rounded to the nearest billion)



Lesson 2 - Processing Data

The overall budget for 2024–25 was £15 billion, divided between the 9 departments. The allocation to each department is given in the table.

Department	Budget allocated for 2024–25
Health	£7.7 billion
Education	£2.9 billion
Justice	£1.3 billion
Communities	£856 million
Economy	£767 million
AERA	£577 million
Infrastructure	£559 million
Finance	£208 million
The Executive Office	£183 million
Total	£15 billion (rounded to the nearest billion)

A series of questions on place value and rounding could be asked. For example:

- 1. How many times bigger is a billion than a million?
- 2. Write the budget for the Department of Justice out fully as a whole number.
- 3. Write the budget for the Executive Office department out fully as a whole number.
- 4. Round the budget for Finance to the nearest 50 million.
- 5. Round the budget for Justice to the nearest billion.
- 6. Round the Communities budget to 2 significant figures.
- 7. Round the AERA budget to 5 significant figures.



Pupils can then calculate percentages and round appropriately.

- 8. Calculate the percentage of the budget allocated to each department rounding your answers to an appropriate degree of accuracy and fill them in the table. (This can be done using a spreadsheet if you have access to ICT facilities)
- 9. Do you notice a problem with rounding the percentages? If so how can you overcome this problem?

Pupils can then calculate reverse percentages.

The budget for Education was 2.5% lower than the previous year and the budget for Health increased by 2.8%.

- 10. Calculate the Education budget for the previous year.
- 11. Calculate the Health budget for the previous year.

Extension

A series of questions on place value and rounding could be asked. For example:

- 1. Write each of the budget allocations in standard form.
- 2. When rounded to the nearest whole number what are the upper and lower limits for the percentages for each of the budget allocations. (A series of questions could be made for maximum and minimum calculations)



Answers

- 1. 1000 times
- 2. £1 300 000 000
- 3. £183 000 000
- 4. £200 million
- 5. £1 billion
- 6. £860 million
- 7. £577 000 000

8.	Department	Budget allocated for 2024–25	Percentage of the Budget
	Health	£7.7 billion	51.3% / 51%
	Education	£2.9 billion	19.3% / 19%
	Justice	£1.3 billion	8.7% / 9%
	Communities	£856 million	5.7% / 6%
	Economy	£767 million	5.1% / 5%
	AERA	£577 million	3.8% / 4%
	Infrastructure	£559 million	3.7% / 4%
	Finance	£208 million	1.4% / 1%
	The Executive Office	£183 million	1.2% / 1%
	Total	£15 billion	100.2% / 100%

- 9. The figures do not add up to 100% if rounded to 1 decimal place. Round to the nearest whole number if using 1 decimal place, add on to some departments until 100% is achieved. (This can be done in several sensible ways)
- 10.£3.0 billion
- 11.£7.5 billion





Extension answers

1. Health 7.7 x 10°	
Education 2.9 x 10°	
Justice 1.3 x 10 ⁹	
Communities 8.56 x 10 ⁶	
Economy 7.67 x 10 ⁶	
AERA 5.77 x 10 ⁶	
Infrastructure 5.59 x 10 ⁶	
Finance 2.08 x 10 ⁶	
The Executive Office 1.83 x 10 ⁶	

2.	Department	Percentage of the Budget	Lower / Upper limits
	Health	51%	50.5 / 51.5
	Education	19%	18.5 / 19.5
	Justice	9%	8.5 / 9.5
	Communities	6%	5.5 / 6.5
	Economy	5%	4.5 / 5.5
	AERA	4%	3.5 / 4.5
	Infrastructure	4%	3.5 / 4.5
	The Executive Office	1%	0.5 / 1.5
	Finance	1%	0.5 / 1.5



Lesson 3 - Displaying Data

As a class or in groups discuss what suitable ways the data for the percentages allocated to each department could be displayed.

Choose one or more of your choices and produce a chart displaying the data.

This can be done using a spreadsheet if ICT is available, prepared axes/sectors for a bar chart/pie chart or the pupils doing all the work themselves depending on their level of ability.

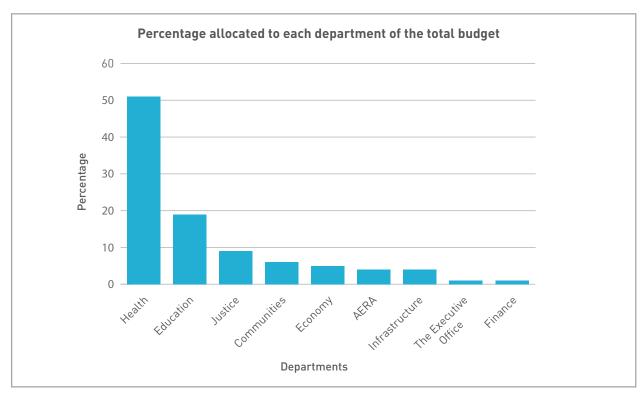
(Prepared axes/sectors sheets have been made available for you to use. A circle with 20 sectors already drawn on it will allow pupils who struggle with the angle calculations to draw a pie chart with approximate sectors. Also, a set of axes will help pupils who might struggle setting up a bar chart to draw one. Please see resources provided.)

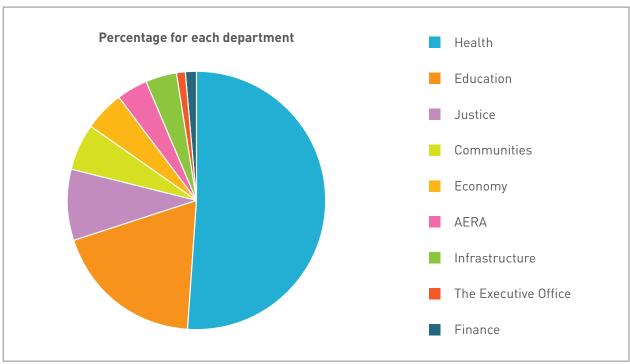
Possible answers

Bar chart or pie chart

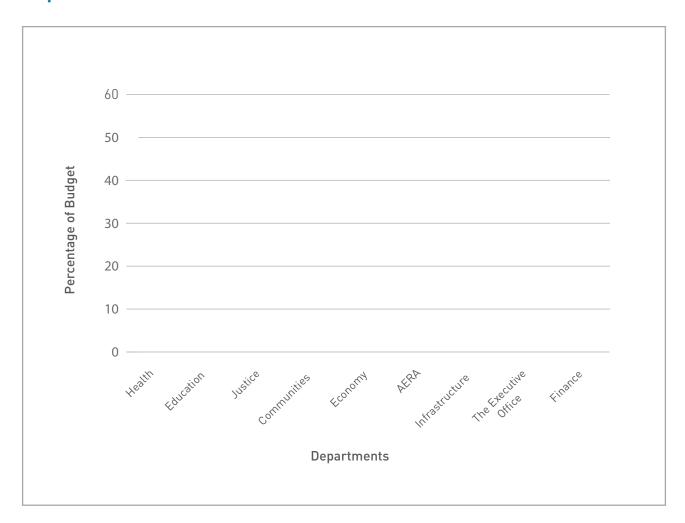
Department	Percentage of the Budget	Sector size
Health	51%	184°
Education	19%	68°
Justice	9%	32°
Communities	6%	21°
Economy	5%	18°
AERA	4%	14°
Infrastructure	4%	14°
The Executive Office	1%	4°
Finance	1%	4°



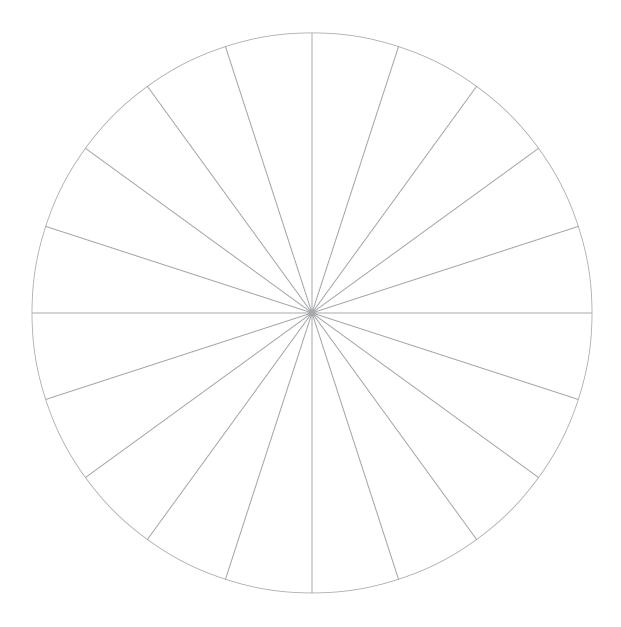














Lesson 4 - Interrogating and Analysing Data

A series of questions to interrogate and analyse the data could be asked. For example:

- 1. Which department gets approximately half of the total budget?
- 2. Which department gets approximately 1/5 of the total budget?
- 3. Which two departments' budgets when added will be approximately the same as that of the Department of Justice (there are 2 possible combinations)?

Pupils can then comment and summarise what they have done. For example:

Comment on your chart stating anything you think it shows clearly and also anything that it doesn't show clearly.

If you have produced more than one different type of chart discuss the advantages and disadvantages of them and decide which you think is best giving your reasons.

Summarise what you have done and what you have learnt from this process.

Answers

- 1. Health
- 2. Education
- 3. Economy and AERA or Economy and Infrastructure