

Middle Classes

Lesson Three

<u>Theme</u>

Classroom Census

Objectives

That the child will be enabled to:

- understand the processes involved in data collection
- decide how census data can be used
- engage in the data collection process
- represent and interpret classroom data using scattergrams, arrow diagrams, block graphs, bar graphs...

Follow-Up Activities

- Home Sweet Home
- A Full House
- Tangram Teaser
- Tessellation

<u>Key Messages</u>

- Data and statistics provide us with information that helps us to plan for the future.
- Each step of the data collection process is important for a successful outcome.
- Data can be represented in graphical, diagrammatic or pictorial form as well as in report form.

You will need:

 Copy of 'Census Cycle' on overhead or per student

Integration/Linkage

- Maths: Data Representation and Interpretation / Shape and Space
- English: Oral Language / Language Development
- Art: Tessellation / Pattern

Teacher's Notes

Talk and Discussion

- Revise the key learning points from previous lessons.
- Elicit from the children the data that is collected in each county to assist the government in planning for the future – population of province / counties / towns, age of population, those in primary / second-level / third-level education, occupations, population working in agriculture, population of Irish speakers, means of travel to work ...
- Discuss how this data can be used in planning for the future requirements for motorways, parks, utilities; education requirements, consumer needs...
- See if the children know how this data will be collected and what is done with the data.

- Familiarize the children with the processes involved in collecting data. Explain that this
 process is cyclical in nature census forms are delivered, forms are completed, census
 enumerators collect forms and answer any queries respondents may have, forms are
 scanned and data is collated and represented in graphical form, data is analysed, plans are
 made for the future of the country based on this data, cycle starts again.
- The 'Census Cycle' diagram could be printed on an overhead transparency. Alternatively, as each step of the cycle is discussed, it could be drawn on a chart or on the blackboard.
- Explain to the children that they are going to conduct a classroom census by collecting data. Discuss with the children the kind of data that might be collected.
- Housing is an area that could be explored. Discuss the homes that children can see on their way to school houses, flats etc... Vocabulary on this theme could then be developed...

*	Dwelling	*	Bungalow	*	Two-Storey	*	Apartment
*	Flat	*	Detached	*	Semi-detached	*	Terraced
*	Housing estate	*	Mobile home	*	Caravan	*	Accommodation

- Information will now be collected on the types of home the children live in. Decide on what dwelling types will be used e.g. detached, semi detached, terraced, other... This can be simplified with younger children.
- Distribute the 'Home Sweet Home' recording sheet to the children with a grid. This could also be printed on an overhead transparency or on an A2 or A3 sheet so that the recording skills might be modelled for the children.
- Decide on the type of questions that need to be asked to elicit the information being sought e.g. What type of home do you live in? Is semi-detached / detached?
- Allow the children or groups to move about the classroom asking these questions and recording the results. Alternatively, the children could use a clipboard and pen and collect this data at break time or lunch time in the school yard.
- When the data has been collected, give the children time to total each column and record the result for each dwelling type. Discussion can follow on such topics as: In what kind of home/dwelling do most children live? Do more children in our class live in a detached or semi-detached home? How many children have we counted altogether? How many children in our class? [Check results to make sure that the data collected is correct – each group should have the same result]
- It is now time to represent the data in different forms. With younger children, one graph type could be worked on. With older children, this could be a good opportunity to explore different ways of representing the same information.

- Samples of a scattergram, an arrow diagram and block graph could be shown to the children on chart or on the overhead projector. Ask the children what other types of graphs could be used to represent this information.
- The children could be divided into groups and asked to represent the information using one of these graphical forms.
- Another follow-up activity is 'A Full House'. The children investigate how many people live in his or her house. The children can then work in small groups and find their own ways of displaying the information collated from the class.
- The data could then be analysed and the children could work out (perhaps with the use of a calculator)
 - ~ The total number of people included in the data
 - ~ The houses that have an even / odd number of people
 - ~ The number of houses that have $\langle or \rangle 5$.
 - ~ The average number of people to a house.
- A more detailed investigation could include the number of adults / children or males / females living in each house.



Home Sweet Home



Name	Detached	Semi-Detached	Terraced	Other
Total				

* Enter the names of your classmates in the above table.

- * Decide on the questions you must ask to get the information you need.
- Ask each person to answer your questions tick opposite that persons name and * under the correct home / dwelling.
- Calculate the total of each column. *



A Full House



Name										
	1	2	2	Δ	5	6	7	Q	Q	10

Scattergram







Block Graph

5		
4		
3		
2		
1		

Test for Tessellation!

Shapes tessellate if they fit together exactly, form a repeating pattern and make a 360 degree angle at the point of contact. Do the following shapes tessellate - Yes or No?





Letter tessellation:



Some letters can also tessellate. Here, the letter 'E' has been drawn and rotated to that if tessellates. Let's investigate the word CENSUS. How many letters tessellate? Use the grids below to see if you can draw the letters that tessellate.

Good luck!





Tangram Teasers

A **tangram** is an ancient Chinese puzzle. It is made from a square cut into 7 different shapes. It can also be made from paper-folding.



- Two large triangles
- One medium sized triangle
 - Two small triangles
- One parallelogram
- One square

How Tangrams got their Name

Once upon a time, the Emperor of China ordered a magnificent glass window for his palace. A poor glass maker called Tan worked for weeks to create the masterpiece. When finished, his wife and he gazed proudly at Tan's glistening palace window. Tan couldn't wait to get to the palace and show the emperor this creation.

He travelled many, many miles on his donkey through the countryside. While climbing a steep mountain, Tan stumbled and dropped the glass. It broke into seven pieces. Tan put his head in his hands and cried. He looked up to hear a nightingale singing as it created pictures using the glass pieces. Tan was delighted and together they made many shapes – animals, people, shapes, buildings and lots more.

Tan decided to show the emperor all the designs he could make with his seven pieces. The king was astonished and immediately asked Tan and his wife to move into the palace to make all the other windows in his kingdom.

Ever since, the seven pieces became known as Tans and the puzzle was called a **TANGRAM**.

Tangrams: Mulberry Publications

Try making a tangram yourself by drawing a square and then folding the square along the lines as shown above. Cut along the fold lines to make the seven pieces.

Use your seven tangram pieces to make the letter C for CENSUS.





Try using the pieces to make the number 2 for 2002.





