

### Lesson Three ~ Census 2006

#### Theme

CENSUS All About Us

#### Objectives

That the child will be enabled to:

- talk about his/her understanding of the census
- show an understanding of why data is collected
- show awareness of the upcoming census on April 23<sup>rd</sup> 2006
- show understanding of the process involved in data collection
- engage in the data collection process at classroom level
- represent and interpret classroom data using Carroll diagrams, pictograms, block graphs...

#### Tasks

- Revision of key messages from lessons 1 and 2
- Class census
- Whole class activity - Designing the form
- Activity 1 Filling in the form
- Activity 2 Checking your sample population
- Activity 3 Using a Carroll diagram to represent data
- Activity 4 Using a block graph to represent data

#### Assessment

- The children will orally recall the key messages from Lesson 2
- The children will show that they are becoming more confident by using the language of the Census in discussion
- The children will show their understanding of the Census process by designing an appropriate class Census form
- The children will show their understanding of the Carroll Diagram as a method of representing data by correctly completing it and answering questions based on the data
- The children will show their understanding of data representation by completing individual block graphs based on class data.

#### Home/School links

Looking at how graphs tell us information. Children show their graphs to those at home and ask them if they have seen any graphs in the past week. Simple examples could be cut out and discussed.

#### Key Messages

- A classroom census is a source of information.
- A classroom census can be designed to provide facts and figures (statistics) to help planning within the school.
- A statistic is a piece of data (information) obtained from a study of a large amount of data.
- Data can be represented in different ways for example, Carroll Diagram and block graph.

#### You will need

- Census Flashcards J 3.1
- Blank Classroom Census Form J 3.2
- Sample Classroom Census Form J 3.3
- Carroll Diagram template J 3.4
- Block graph template – absence from school J 3.5

#### Language

*Census, enumerator, government, head of the household,*

*Collect, question, information, form, ask, Sunday, April, population, age, address, male, female, count, country*

*Revision of language of comparison: taller/shorter, more/less, most/least etc.*

*Statistics, data*

#### Integration and Linkage

**Maths:** Counting and numeration, comparing and ordering and using place value

**English:** Writing genre - form filling

**Science:** Living Things: Variety and characteristics of living things – Gender

#### Teacher observation Tips

Take note of children's use of the language during their work. Pose questions that encourage them to use the language in a meaningful way and note any children who show lack of understanding.

Make particular note of children who are exhibiting good group work skills such as active listening and those who are being consistently passive – this information can be used to guide group organisation in the future.

# Teacher's Notes - Lesson 3

## Oral/mental starter

Practise counting skills with rhythm counting, clap / tap counting... Children count forwards, backwards, from different starting points to different stopping points e.g. count forwards from 12 to 22 in twos, fours; count back from 28 to 16 in twos, fours etc ...

## Revision of key messages from Lesson 2 - what do we remember

- A census is an official count of the population of a country.
- Almost every country takes an official population census once every five or ten years.
- 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.

## Talk and Discussion

Revise the main points covered in Lessons One and Two revising the flashcards as a round-robin game, singing the Census song and revisiting the Census cycle from the chart. Flashcards are available as J 3.1

## Brainstorm

Use a class photograph to initiate a discussion about the class and ask. How many children in the class? Are all of the children in the same class? Can you describe the class e.g. number of boys/girls; where the children attending the school come from - the town/the country; how the children travel to school...

**Has anyone heard of the word statistics? Discuss possible options and lead the children to the idea that statistics are *pieces of data obtained from a study of a large amount of data*, for example there are thirty children in our class and four have red hair – four out of thirty children in second class in St. Mary's school have red hair (that is a statistic). Get the children to identify some other obvious and easy statistics using the prompt - *There are 30 children in our class and ... have ...***

## Whole class activity - Designing the form

Write the word Census on the blackboard – discuss how each letter can be used to explain the idea behind the census

- ~ C – Count
- ~ E – Everybody on the
- ~ N – Night of
- ~ S – Sunday April 23rd for
- ~ U – Useful
- ~ S – Statistics

- Refer to the display of Census posters that the children have designed/coloured
- Ask the children to work in pairs to consider what questions could be put on the form e.g. name, address, age, birthday month... These headings could be put up on a white/blackboard and agreed by the class. This could then be used as a basis for gathering the relevant information about their own class. It could be completed on sample census form J 3.3

- The forms can be distributed to the children as a role-play with a Census enumerator delivering the census forms to the children and helping to answer any questions children may have. The enumerator will also inform the children of the Classroom Census date. (The teacher could role-play the enumerator or this could be done with an older class pupil who was also exploring the Census – ideal for multi-class situations).
- The children then examine the forms in pairs to consider how they will go about completing them and how the questions will be answered correctly.

### **Plenary after each activity**

Children discuss the activity and make suggestions as to how the next stage will proceed. This is the ideal opportunity to assess how children are understanding the concept of the census and the underlying mathematical processes for completing a task or solving a problem (see skills list on pages 7 and 8 of Census 2006 activities).

If there are some misunderstandings they can then be addressed at the beginning of the next activity during the brainstorm phase.

### **Activity 1 - Filling in the form**

- On the date of the Classroom Census, the children will be given the opportunity to complete the forms throughout the day. This factual writing exercise could be completed at a designated writing corner/area that has been set up for the census. The area could be decorated with the children's census posters and information cards about the census. Pens, pencils, erasers, paper, additional census forms and envelopes could also be provided at the census-writing table.
- When children have successfully completed their census forms, they are kept in a safe place until collected by the Census Enumerator/Collector on an agreed day.
- The teacher can then discuss with the children how the set of data that has been collected from the Classroom Census could be used.

### **Activity 2 - Checking your sample population**

- As the national census is an official count of the population of the country, the first task of the classroom census is to establish how many people are present at school/absent from school on Census day i.e. an official count of the classroom population.
- Name cards can be distributed to the children. The teacher can then use the census forms to establish who is present/absent. The number of those present/absent is recorded on the blackboard/chart.

### **Activity 3 - Male or female? Using a Carroll Diagram to compare data**

The question on gender shows an example of how responses to just one question can be represented in multiple ways.

- Conduct a count of the number of males/females in the classroom. Once again, concrete materials e.g. cubes of different colours can be used to make a block graph.
- A count can also be done on those present/absent on the class census day.

This type of activity will provide data for comparison using a Carroll Diagram

- Both sets of data i.e. attendance and gender could also be represented in diagrammatic form using a Carroll diagram. This type of diagram is used to represent two attributes or characteristics.
- Show the children a chart with the empty Carroll diagram J 3.4 (This can be enlarged to A2 or A3) and discuss what should be placed in each box.
- The children can then place their name cards on the Carroll diagram e.g.

|               | Boys   | Girls  |
|---------------|--|--|
| At School     | Martin      Patrick<br>Séan          Ronan<br>Paul<br>Kevin          John<br>Joe              Noel | Ann          Janet<br>Pauline      Karen<br>Sinéad<br>Jennifer<br>Mary |
| Not at School | Seamus      Pat<br>Cathal<br>Michael   | Brenda      Sheila<br>Margaret<br>Deirdre      Fiona                   |

- When the Carroll diagram is completed, the teacher can pose questions relating to the set of data e.g. How many boys were at school on Census day? How many children were present/absent on Census day? Were there more boys or girls absent on Census day? How many more girls than boys were absent on Census day?
- Children could also be encouraged to ask questions based on the information presented in the Carroll diagram.

#### Activity 4 - Using a pictogram or block graph to record data

A further study relating to attendance would be to record the number of boys and girls that are absent on each day of Census week and to compare the results. This data could be represented in a pictogram or block graph J 3.5 using the techniques above i.e. putting name cards in place, counting children as they stand up etc.

- At the end of the week this data could be examined and discussed e.g.
  - ~ How many boys were absent on Monday?
  - ~ How many girls were absent on Tuesday?
  - ~ Was there any day of the week when nobody was absent?
  - ~ What is the total number of girls absent during the week? Let's count.
  - ~ What is the total number of boys absent during the week? Let's count.
  - ~ Were there more boys or girls absent?
- As an alternative, the teacher could use the pictogram for the total number absent rather than working on the set of boys and set of girls.

### **Extension work**

Using the data collected from the class census keep the chart on the wall and activities can be written on the black/whiteboard a couple of times a week for early finishers or to extend more-able students. Working in small groups children can also try to devise ways of recording data and during a plenary session these suggestions can be examined and tried out by the class. This is an essential skill (listening to and discussing both own and other children's mathematical work).

### **Home/School links**

Children bring home their completed forms and discuss them with their parents/guardians. They could ask those at home if they have seen any graphs lately on TV or in the newspaper and these could be brought to school for a simple discussion. Pie charts on preferences often appear in newspapers and are very useful in this context.

Census

count

country

everybody

question

information

people

form

collect

deliver

male

female



address

date of

Sunday

April 23rd



# Classroom Census Form





## Classroom Census Form



Name: .....

Are you male or female? .....

In what month were you born? .....

How old are you? .....

What colour eyes do you have? .....

What colour is your hair? .....

Where do you live?

In the town ☐

In the country ☐

How do you travel to school?

Walk ☐ Cycle ☐ Bus ☐ Car ☐

Other .....



|                     | Boys | Girls |
|---------------------|------|-------|
| At<br>School        |      |       |
| Not<br>at<br>School |      |       |

[illegible]