Census 2006

Fifth and Sixth Class

Lesson One ~ Census 2006

Theme
Data Collection
~ organising and using information

Objectives
The child will be enabled to:
- explain some reasons for collecting and analysing facts and figures (data and statistics)
- identify how data can be used to help solve real life problems and plan for the future
- collect data/information
- represent data in different formats
- discuss the data collection process.

Integration and Linkage
See Census 2006 Activities for full list of integration opportunities.

Tasks
- Discussion on the data collection process
- Creating the steps in the data collection process
  - Activity 1 - Understanding the data collection process
  - Activity 2 - Collecting the data
  - Activity 3 - Representing data - block graph / bar graph / bar line graph

You will need
- A4 sheets - Steps in the data collection process on the topic of recycling S 1.1
- Playing card sized version of above S 1.2
- Overview chart of data collection process S 1.3
- Tally sheet S 1.4
- Graph templates S 1.5
  a) block b) bar c) bar line

Home/School links
The resource S 1.2 could be photocopied and sent home as a stimulus for discussion on the topic, as an explanation of what is being done in class and also to indicate its relationship to the census process.

Key Message
- Many everyday problems can be solved or prevented by collecting data from others and by using this data to make changes for the better.

Language
Collect, information, data, ask, pose, question, list, form, record, results, solve, prevent, problem, graph, block graph, bar chart, bar line graph, represent…

The above language can provide a very rich source of material for discussion and also for written word work.

Assessment
The children will:
- orally discuss the key messages of the data collection process
- use the language associated with this process in context
- correctly sequence the steps in the data collection process by describing or drawing the process as a simple flowchart
- interpret information presented in graphical format.

Teacher Observation Tips
Take note of children who are having particular difficulties with sequencing information and reinforce this in other areas of the curriculum. The resource S 1.2 is particularly useful for this.
Note children who are finding the activity too easy and use resource S 4.8 (from Lesson 4) to encourage them to use ICT in the development of graphs. This would also enable them to branch out into use of charts in a written report (English – writing and reading in different genres).

Teacher's Notes – Lesson 1

Brainstorm

Has anyone ever thought about the information that is collected in the classroom each day?
What information does the teacher collect?
Why would this information be needed?
What if this information was never collected or recorded? Discuss the difficulties that would arise.
Explore the children's thoughts and ideas.

- Talk to the children about the information/data that could be collected to help plan:
- ~ at classroom level
- ~ at school level
- Discuss how the collection of this data could be used for effective organisation and for the prevention of problems.
- Talk to the children about typical everyday problems at classroom, school and local level. Provide the children with opportunities to consider how these problems might be solved (in pairs/group discussion).

Introduce the children to the word **DATA** and its definition i.e. information in numerical form e.g. list of the children's ages, test scores …

Whole class activity – Recycling Discussion

This topic interfaces well with:
SESE:Science – Environmental awareness and care
SPHE: Myself and the wider world – environmental care.
It is a topic which must be approached sensitively as many homes will have strong views on the issue of waste charges, local availability of recycling facilities, environmental hazards caused by misuse of such facilities, etc. Therefore it is essential to explore the attitudes and views of the children before developing the topic.

- Encourage the children to think of ways in which the collection of data could help to solve everyday problems in their classroom, school and local environment.
- Present the children with a problem for class discussion e.g. the amount of refuse being produced in the home/school/local environment. Consider the problems/difficulties that are experienced because of waste disposal.
- Talk to the children about ways of tackling this problem and list the children's suggestions on a blackboard/flipchart e.g. less packaging; recycle some of our waste…
- Develop the concept of recycling by discussing:
  - Why is recycling important?
  - What can be recycled?
  - What is being recycled at the moment?
  - How could we establish a recycling station?
  - What do we need to know about recycling?
  - How we can encourage others to recycle?
- Ask the children to think about the amount of waste disposal in their local environment. Talk about how/where waste is put. Discuss the attitude to recycling in the local environment encompassing both sides of the argument. Invite children to predict what percentage of people recycle their waste and what materials are recycled locally.

Collecting the data

- Discuss with the children the ways in which this data could be collected in order to give an accurate record e.g. making a list of children's names and asking if they do/do not recycle waste in the home; using a tally sheet to record items that are recycled …
- Discuss the best ways of representing this data once it has been collected e.g. block graph, bar chart, bar-line graph and at this level pie charts could also be introduced, particularly if the computer is being used to generate graphs.

Activity 1: Understanding the Data Collection Process

- Explore with the children what they know about the data collection process and use the cue cards **S 1.1** as a basis for further discussion. Children can be encouraged to sequence the steps and discuss what might be done at each stage.

  Step 1: Pose the Question i.e. Do you recycle your waste? What items do you recycle?
  Step 2: Collect and record the data
  Step 3: Represent the data on graphs
  Step 4: Use the data to solve problems

Brainstorm

- After discussion individual children, pairs or groups can be given the smaller cards **S 1.2** and they can sequence the activities of the data collection process. They could also copy these into their copybooks and use them to brainstorm the topic in pairs or small groups.

- Use **S 1.3** as a chart to remind them of the cyclical nature of the data collection process as they work through the activities.

Activity 2: Collecting the data

The Big Question: What do you recycle?

1. Distribute the tally sheets (**S 1.4)** to the children and demonstrate how to complete them.
2. If children have not used tallying before demonstrate how to tally by marking responses in groups of five (using four vertical strokes and one stroke across the group as a fifth)

   e.g. 

3. Ideally two children could take the tally on a large chart at the blackboard with another child doing the count. The other children in the class will have brainstormed the question and can call out their results for the tally people to add to the chart at the board.
4. The children at the top of the class tally the number of positive respondents beside each item listed.
5. When all of the listed items have been tallied, the children are given an opportunity to add items that may not appear on the tally sheet.
6. The total is then calculated for each item.
7. The children can then copy the class data on their own individual/pair tally sheet for use in creating graphs.
8. The discussion can then focus on the questions at the bottom of **S 1.4** or they can be written on the blackboard.

Activity 3: Representing data

1. When the data has been collected, the children can represent the data in graphical form e.g. block graph, horizontal or vertical bar chart… Using the templates (**S 1.5 a, b and c**) discuss with the children which type of graph they would like to use. Alternatively, the children can use graph paper to create their own graphs without guidance.
2. Different graph types can be produced by pairs or individual children. These can then be displayed in the classroom.
3. Interesting questions could include: *How many recyclable items were listed? What other items could be listed? What item is recycled most/least? Is there any item that is not recycled? Why do you think this is so? Do you think this is a positive reflection of waste disposal/recycling in our locality? What could be done to improve the situation?*
4. Decide how the data might be used to improve the situation in the locality e.g. present the information to others in school/at home/in our locality; educate others about recycling; set up a recycling station in the home/school; become involved in the Green School Initiative; raise awareness of the importance of recycling in our locality by making posters, bookmarks, information leaflets or by writing articles in the school or local newsletter.

Plenary

Discussion on what we learned today.

- *What information/data is collected in the classroom/school?*
- *Why is it important to collect information/data?*
- *How can the collection of information/data help to solve/prevent problems?*
- *Pretend you are explaining the data collection cycle to someone from another class – can you tell that person the sequence in which the cycle happens? They could also make a PowerPoint presentation for another class.*
- *As a whole class activity hide the cards from the data collection cycle and ask the children to tell you the first step, second step.*
- *Discuss the way in which data was collected in the classroom to highlight an issue/problem*
- *Consider the usefulness of the collected data. If the study was being conducted again, what changes should be made? What would you need to do if you wanted to do the survey on a larger scale?*
- *Discuss:*
  - *What other questions could be posed?*
  - *How might a tally sheet be designed?*
  - *What graphical representations best suit the data being presented?*

S 1.1

Pose the question

What do you recycle?

Collect and record the data

Represent the data on graphs

Use the data to solve problems

S 1.2

Steps in Census Cycle

Pose the question

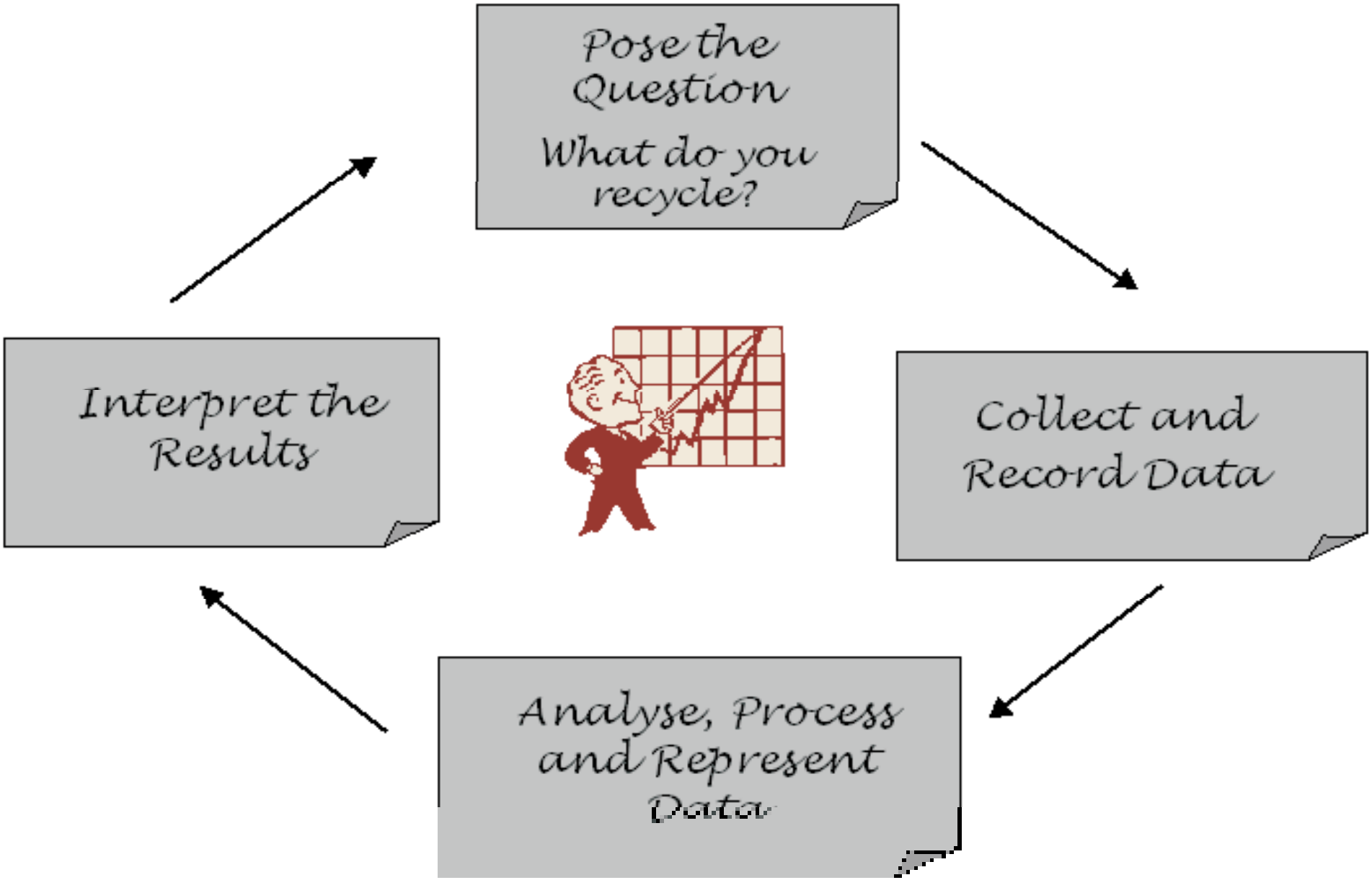
What do you recycle?

Collect and record the data

Represent the data on graphs

Use the data to solve problems

S 1.3


Pose the Question
What do you recycle?
Collect and Record Data
Analyse, Process and Represent Data
Interpret the Results

S 1.4

Let's Tally

What do you recycle?

Let's investigate:

	Tally \ IIII	Total
Paper		
Cardboard		
Glass		
Aluminium cans		
Plastic		
Clothes		
Steel cans		
Books		

- How many items were listed?
- Did you add any new items to the list?
- Which is the most recycled item in your locality?
- Which is the least recycled item in your locality?
- List the items in order of most recycled to least recycled

_____

- Are there any items that are not recycled? Why do you think this is so?

_____

- How might the above information be used to improve your locality?

S 1.5 a

Block Graph

Cardboard	Glass	Aluminium Cans	Plastic	Clothes	Steel Cans	Books	Paper		

What do you recycle?

S 1.5 b

Bar Chart

10									
9									
8									
7									
6									
5									
4									
3									
2									
1									
	Cardboard	Glass	Aluminium Cans	Plastic	Clothes	Steel Cans	Books	Paper	

What do you recycle?

S 1.5 c

Bar Line Graph

10									
9									
8									
7									
6									
5									
4									
3									
2									
1									
	Cardboard	Glass	Aluminium Cans	Plastic	Clothes	Steel Cans	Books	Paper	

What do you recycle?