



Theme

Birthdays!

Objectives

That the child will be enabled to:

- ask a question that will provide the information needed
- discuss how simple investigations are carried out
- collect data using concrete materials to keep a tally
- count the number of objects in a set
- understand the value of counting in keeping track of objects and people
- represent and interpret real data in rows and columns using real objects, models and pictures (block graph or bar chart)
- compare simple data sets

Methodologies

- ✓ Problem-Solving
- ✓ Collaborative Learning
- ✓ Using the Environment
- ✓ Active Learning
- ✓ Skills through Content
- ✓ Talk and Discussion

Mathematical Skills

- ✓ Applying and Problem-Solving
- ✓ Communicating and Expressing
- ✓ Integrating and Connecting
- ✓ Reasoning
- ✓ Implementing
- ✓ Understanding and Recalling

Tasks

- Talk and discussion – brainstorm session
- Whole class activity - sort and classify birthdays using concrete materials and discuss the result
- Individual/Pair Work – create block or bar chart
- Analyse data
- Plenary – discuss investigation / clarify steps in process

You will need

- Long paper strips or card
- A clothes peg for each child
- Copy of Resource 1.1 Block Graph template
- Copy of Resource 1.2 Bar Chart template

Key Messages

- Asking key questions is important in carrying out an investigation
- Counting is an important activity that we use every day in the real world
- Pictograms, block graphs and bar charts can be used to show information
- These graphs are used so people can answer questions and compare information i.e. interpret data

Integration and Linkage:

English: Oral language: Talk and discussion, asking questions, answering questions, reasoning, describing, explaining, comparing...

Language Development:

Ask, question, how many? Count, investigation, birthday, months of the year, collect, information, materials, clothes pegs, paper strips, most, greatest, least, same as, none, show, block graph, bar chart...

Linkage within Mathematics:

Number – Counting and numeration, comparing and ordering

Data - Representing and Interpreting data

Assessment

The children will

- identify orally some reasons why the Rolla is a necessary part of their school life and why it is important to gather and record information
- sort and classify their own class (and/or other classes) by present/absent using concrete materials and discuss the result (a lot more present than absent, more children absent on Tuesday...)
- represent the data collected by creating a Class Pictogram and will show their understanding of the results by reading and interpreting the results.

Teacher Observation Tips

Record in a notebook any significant events you notice such as a child having difficulty with the investigation process, representing or interpreting data.

Note also children who may need to be challenged with the extension suggestions provided.

Extension

Children could be taught to create graphs on the computer using a spreadsheet and program e.g. MS Excel.

Home/School Links

For homework the children can ask their parents/guardians how they use counting in their daily lives, at work, at home and draw pictures which they can bring to school for discussion.

Teacher's Notes - Lesson 1



Introduction

Talk and Discussion -How Many?

- **How many children came to school by car today? How many boys in school today? How many children have fruit for lunch?**

*In this talk and discussion session, children will come to realise that they will not be able to provide an answer without **carrying out an investigation** and **counting the set** e.g. of those who travelled by car, the number of boys in school today, the number of children who have fruit for lunch etc...*

- **What must we do before we can answer any of these questions?**

We must ask a question so that we can get the information we need.

- **Let's think about the questions we need to ask.**

If I want to know how many children came to school by car today, what question will I need to ask each child? *Did you come to school by car today?*

If I want to know how many children have fruit for lunch, what question will I need to ask each child? *Do you have fruit for your lunch?*

Whole Class Activity

- Take the following question and this time; carry out the investigation with the children.
Question: "How many children have a birthday this month?"
What question will we need to ask every person here before we can find the answer?
In what month is your birthday?
- Once it has been established what question should be asked, explain to the children that the investigation will now be carried out at whole class level. Children are divided into groups of four and each group is assigned a group leader.
- Twelve strips of paper are displayed and labelled with each month of the year (Diagram A).
- Group leaders stand and ask members of their group the question "In what month is your birthday?"
- As each child responds, he/she is given a clothes peg and attaches the peg his/her birthday month e.g.

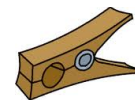
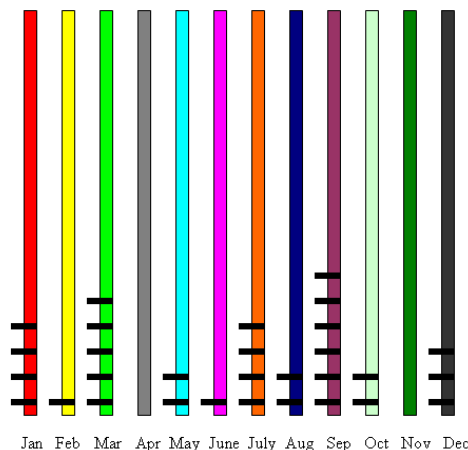
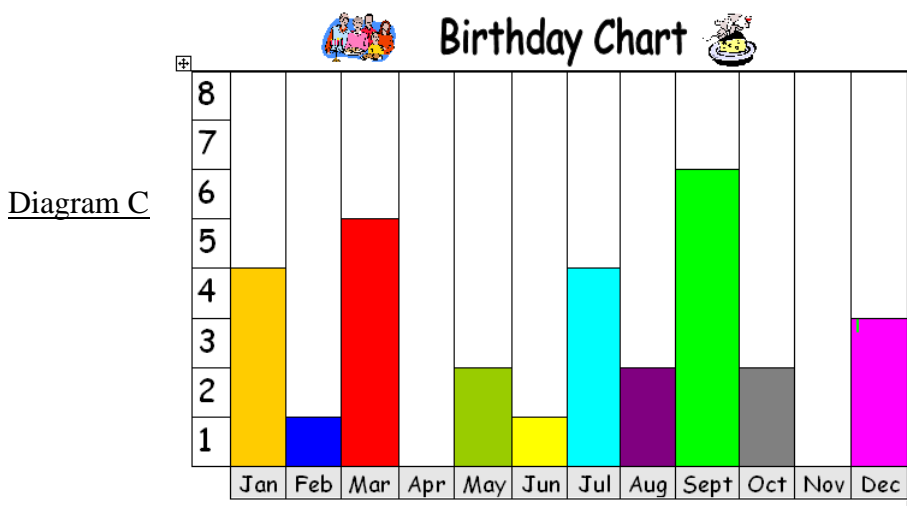
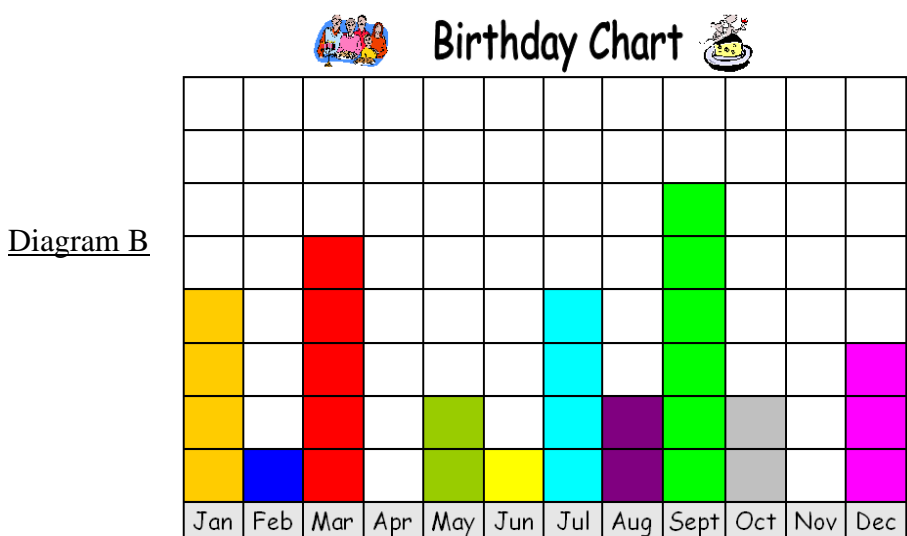


Diagram A

- The investigation has now been carried out and the information collected. This information has been represented using concrete materials i.e. with clothes pegs on paper strips.
- Explain to the children that this information can then be shown (represented) on a graph.
- Model / demonstrate how the information is represented in either a block graph or a bar chart using an enlarged blank template (see resources section).
- Children can then work independently and show the same results in their own individual block graph template e.g. Diagram B or on the bar chart template e.g. Diagram C. Use resource templates provided at end of lesson. Some children may be able to create these graphs without the use of a template.



- The next task is to analyse the data. Children are asked to examine their graphs and to interpret the results. It will be useful at this stage to provide guiding questions for the children e.g.

What Information Can We Get From the Graph?

Answer these questions:

- ☺ Which month has the greatest number of birthdays?
- ☺ Which month has the least number of birthdays?
- ☺ Are there any months which have the same number of birthdays?
- ☺ Are there any months which have no birthdays?
- ☺ How many birthdays in summer?
- ☺ How many birthdays in April?



Plenary Session

In this session, the children come together to discuss elements of the lesson:

- It is always important to bring children back to the original question that was asked i.e. ‘How many children have a birthday this month?’
- Ask children to clarify the result based on the information collected and represented i.e.

There are _____ children in the class with a birthday this month.

- Encourage children to summarise the main learning points in the lesson:
We have learned today that ...
To answer some questions ...
We need to ask a good question...
We need to carry out an investigation.
- Guide the children through the process once again:
How did we carry out this investigation?
 1. First, we asked the question i.e. In what month is your birthday?
 2. Next, we collected the information we needed
 3. We wrote down (recorded) this information
 4. Then, we showed the information using materials (clothes pegs)
 5. We created graphs
 6. Next, we examined the graphs
 7. This helped us to answer the question that we asked i.e. In what month is your birthday?
- Ask the children to name what the most important parts of the investigation were i.e. the question asked / collecting the data and counting the results

Extension work

- Investigate how many birthdays are in each season of the year.
- Represent this data using a spreadsheet e.g. MS Excel
- Collect data from the other classes within the school and compare this data

Home/school links

If the children have completed the graph on a worksheet or in a copy they can bring their work home and discuss with their parents how they carried out the investigation.

How do your parents/guardians use counting in their daily lives? Draw five pictures of how someone in your home uses counting at work, during the day...



Birthday Chart



Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec



Birthday Chart



8												
7												
6												
5												
4												
3												
2												
1												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec