Clowning Around

A book about collecting and representing data

Aim

Clowning Around introduces the collection and representation of data. From this introduction, students undertake their own investigations and decide how to sort and display data.

These whole-class activities provide students with the opportunity to:

- listen to a story about collecting and representing data
- use a tally chart to collect data
- use materials to represent data
- use the *Teaching Tool* to represent data
- participate in real-world data investigations
- explore one-to-many relationships

Activities

1. Listening to the story
2. Recording categories
3. Using tallies to record data
4. Suggesting graph labels and titles
5. Using materials to act out the story
6. Using the teaching tool to act out the story
7. Using the teaching tool to represent data
8. Interpreting bar graphs
9. Introducing one-to-many relationships

I. Listening to the story

Resources
- *Clowning Around*

Activity
Show the cover of *Clowning Around* to students and read the title aloud. Encourage volunteers to predict what they think the story might be about. Slowly read the story and discuss each of the pictures. Then ask, **What happened in the story? What did you see in each picture?** Encourage students to describe the different items of clothing that were worn by the clowns and the many different tricks that they performed. Read pages 2–3 of the story again and have the students talk about the different colour noses worn by the clowns. Ask, **What colour noses are the clowns wearing? How many clowns are wearing each colour?** Repeat for the remaining pages of *Clowning Around*.

2. Recording categories

Resources
- *Clowning Around*
- Blank cards
- Large permanent marker
- Blu-Tack

Activity
Review the students' understanding of graphs. Ask, **What is a graph? What does a graph do?** Bring out the fact that a graph is an organised, pictorial representation of data. Read pages 2–3 of *Clowning Around* and ask, **What do you see?** Select a confident volunteer to explain the clowns are putting on different colour noses. Write *Noses* on a blank card and attach it to the board. Point to the card and ask, **Could we make a graph about the different colour noses worn by the clowns? How?** Encourage students to explain that they could record the number of clowns that are wearing each colour nose. Have the students identify the different colours of noses in the picture. Write each colour name on a blank card. Stick these three cards below the other card on the board. Repeat for the remaining pages of the story.

3. Using tallies to record data

Resources
- *Clowning Around*

Preparation
Draw a tally chart with three columns and four rows on the board. Write these headings in the first row: *Item* (in the first column), *Tally* (in the second column), *Total* (in the last column).

Activity
Read pages 2–3 of *Clowning Around* and discuss the illustration. Point to the tally chart and ask, **How can we use this tally chart to record the total number of clowns wearing each different colour nose?** Encourage a volunteer to explain that you can write the name of each colour in the first column. Then in the second column, draw a tally mark for each time this colour is represented in the illustration. Write the colour names in the first column. Then have the students count the number of clowns wearing a green nose. Invite a student to draw that number of tally marks in the tally column for green. Repeat for the other two colours. You may need to remind the students how to record the fifth tally mark. Repeat for pages 6–7 of *Clowning Around*.

4. Suggesting graph labels and titles

Resources
- *Clowning Around*

Preparation
Draw a tally chart with three columns and four rows on the board. Write these headings in the first row: *Item* (in the first column), *Tally* (in the second column), *Total* (in the last column).

Activity
Read pages 8–9 of *Clowning Around*. Say, Look at this picture. **What data can we record in our tally chart?** Encourage a volunteer to explain that we could record the number of clowns wearing spotted shirts and the number of clowns wearing striped shirts. Write the two different types of shirts (spotted and striped) in the *Item* column. Next, have the students count the number of clowns wearing each type of shirt. Invite volunteers to record the number of each type with tally marks in the tally chart on the board. Invite other students to write the total of the tally marks in the last column. Then say, **Our tally chart needs a title at the top so that we know what the information is describing. What can we call our tally chart?** Guide the discussion to choose a title such as *Clown Shirt* sor *Type of Shirt*, and write this at the top of the chart. Repeat for pages 10–13 of the storybook.

5. Using materials to act out the story

Resources
- *Clowning Around*
- Square sticky notes

Activity
Draw a vertical bar graph on the board. Read pages 2–3 of *Clowning Around* and discuss the picture. Point to the vertical bar graph on the board and ask, **How can we graph the different colour noses worn by the clowns?** Select a volunteer to explain that you could record the number of clowns wearing a red, green, or yellow nose. Write the categories, *Red*, *Green* and *Yellow* on the horizontal axis of the graph. At this stage, do not number the vertical axis. Next ask, **How many clowns are wearing a green nose?** To represent this number, invite three volunteers to place a sticky note in the graph above *Green*. Ensure that the sticky notes do not overlap and form a straight column. Repeat for the remaining colours. Ask, **What do you notice about the number of different colour noses? Which colour is the most popular? Which colour is the least popular?** Repeat for the remaining pages of the storybook.

6. Using the teaching tool to act out the story

Resources
- *Teaching Tool*
- *Clowning Around*

Activity
Ensure that all the students can see the *Teaching Tool*. Remind the students about the tally charts made in previous activities and the different ways in which the data could be presented. Read pages 2–3 of *Clowning Around* and ask, **What colour noses are worn by the clowns?** Once identified, invite a confident volunteer to use the writing tool to write the colours *Red*, *Green* and *Yellow* below the horizontal axis in the work area. Then ask the students to identify the number of clowns wearing each colour nose. Represent this number on the *Teaching Tool* by dragging over the matching number of graphing blocks and stacking them above the appropriate category. Tell the students that each graphing block represents one clown. Ask, **Which colour nose was the most common? Which was the least common? How many more clowns wore red noses than green noses? How many less clowns wore yellow noses than green noses?** Repeat for pages 6–7 of the storybook.

7. Using the teaching tool to represent data

Resources

- *Teaching Tool*

Activity

Ensure that all the students can see the *Teaching Tool*. Write the categories *Blue*, *Brown* and *Green* on the horizontal axis of the graph in the work area. Invite one student to the front of the classroom and have them identify their eye colour. Have the student represent their eye colour by dragging over a graphing block and placing it above the category name. Ask, **How many students have (blue) eyes?** Once students have identified this number, write *1* on the vertical axis of the graph. Point to the 1 and ask, **If this mark represents one, what would the next mark represent?** Invite a volunteer to number the remainder of the vertical axis.

Continue the activity by inviting other members of the class to record the colour of their eyes on the *Teaching Tool*. Throughout the activity, ask questions such as, **How many of your classmates have brown eyes? How many have blue eyes? How many have green eyes? How many more students have brown eyes than green eyes?** Repeat the activity for other personal attributes such as type of pet, preferred drink, sport played, and so on.


8. Interpreting bar graphs

Resources

- *Teaching Tool*

Activity

Ensure that all the students can see the *Teaching Tool*. Create a vertical bar graph on the *Teaching Tool*. Have the students work in pairs to draw a tally chart and interpret the bar graph to complete the tally chart. Invite pairs of students to present their tally chart and describe their process. Repeat as time allows.
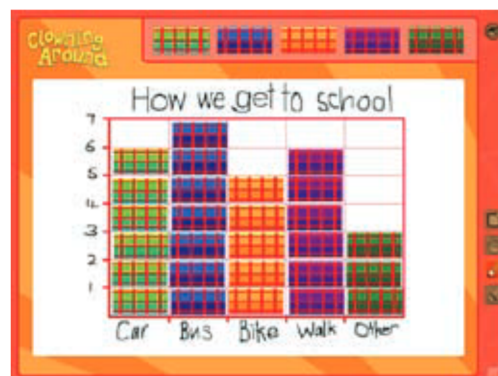
9. Introducing one-to-many relationships

Resources
• Square sticky notes

Activity
On the board, draw a tally chart that has five columns and eleven rows. Write *Red*, *Blue*, *Black*, *White*, and *Other* to label each column. Take the class to an area of the school grounds that overlooks a road and have them use tallies to record the colour of each vehicle that passes. Once the students have recorded ten vehicles of one colour, return to the classroom. Draw a vertical bar graph (complete with gridlines) on the board and write the labels from the tally chart across the horizontal axis. The vertical axis should only show five increments. Do not number these yet. When the students realise that there are too many vehicles to present on the vertical axis ask, **How can we represent each vehicle on the graph? Does the each space on the graph have to represent one vehicle?** Through discussion bring out that each increment on the vertical axis can be numbered so that each space on the graph represents two or more vehicles. Decide how to number the graph and then invite students to place sticky notes to represent the collected data.