

Carroll diagrams and tally charts

National Curriculum attainment targets

- Interpret and construct tally charts
- Ask and answer simple questions by counting the number of objects in each category

Lesson objective

- Construct a tally chart from a Carroll diagram and vice versa

Previous related lesson

Unit 7, Week 3, Lesson 1

Prerequisites for learning

Pupils need to:

- sort objects into groups

Vocabulary

sort, group, category, Carroll diagram, tally chart, total, compare

Future related lessons

Unit 7, Week 3, Lesson 3; Unit 7, Week 3, Lesson 4

Success criteria

Pupils can:

- sort items using a Carroll diagram
- construct a tally chart to show the number in each group
- compare the number of objects in different groups



Getting Started

- Choose an activity from Statistics.

**Collins
Connect**
Year 2, Unit 7,
Week 3

Teach

Resources

selection of coloured building blocks, coins, shells, buttons, 2-D shapes, 3-D shapes and other small items for sorting (per group); Resource 99: Carroll diagram and tally chart (per group); camera (per class, optional)

i Mr Carroll is Lewis Carroll, the author of Alice's Adventures in Wonderland.

	Blue	Not blue
Triangle		I
Square		
Circle		

- Say: **I've been thinking about the sorting that we did yesterday. It was fun but I think we could sort things a lot more quickly.**
- Display: the Carroll Diagram tool. Say: **This is called a Carroll diagram, because it was invented by a Mr Carroll.**
- Say: **We are going to sort some shapes.**
- Write 'Blue' at the top of the first box of the Carroll diagram and 'Not blue' at the top of the second box.
- Say: **I am going to choose a green triangle and put it here, because it is not blue. Who would like to come and choose a shape and put it where they think it should go?**
- Choose several children to come and add a shape to the diagram.
- Ask: **Why have you put your shape there?** Sometimes ask the class if they agree. Continue until the Carroll diagram is getting full, with shapes overlapping.
- Say: **This is getting a bit confusing now. I don't know how many we have of each shape. We need a way to see what we are doing.**
- Display: Slide 1 showing the tally chart, or draw a simple tally chart on the board next to the Carroll diagram. Remind children that you chose a green triangle. On the board, make a tally mark in the 'Not blue' section of the tally chart, in the triangle row and cross out your shape. Say: **I can make a tally mark here to show that I chose a not-blue triangle. Making a tally mark helps us to keep track of what we have.**
- Ask: **Who thinks they can explain where to put a tally mark for their shape?**
- Choose several children to come and add a tally mark to the chart and cross out the matching shape.
- Ask: **Why have you put your tally mark there?** Sometimes ask the class if they agree. Continue until the tally chart is complete.



- Ask: **How could we find out if we had more blue shapes or more not-blue shapes?** Agree that we could count the tally marks. Count the marks together and agree which group was the largest.
- If there is time, ask questions such as: **How many more were there in the largest group? How do you know?**
- Divide the class into groups and send them off to tables to work together to choose the criteria for the Carroll diagram, sort the items and then complete the tally chart.
- Collect the completed tally charts.

Individualised Learning

Refer to Activity 2 from the Learning activities on page 314.

Activity Book 2B: – Page 36: Sorting information

Resources: coloured pencils (per child)

Progress Guide 2: – Support, Year 2, Unit 7, Week 3, Lesson 2: Carroll diagram for numbers

Resources: selection of approximately ten 2-D shapes (per pair or child)

Plenary

Resources

Resource 99: Carroll diagram and tally chart (per group); completed Carroll diagram and tally charts from each group

- Allow time for groups to choose the criteria for the Carroll diagram, sort the items and then complete the tally chart. Then hold a mini-plenary. Stop the class and ask each group in turn to explain briefly how they decided to sort their collection and what labels they used on the Carroll diagram. Then ask them to say which item they had most and fewest of.
- Say: **Now have another go with the same items. Use the second Carroll diagram and tally chart and choose a different way to sort your items.**
- After all groups have completed their tally chart, collect all the sheets and bring everyone together.
- For each pair of sheets, ask: **What did you decide to label your Carroll diagram the first time? How many tally marks did you need to make for the not category? Was it the same the second time? Why/why not?**
- Ask: **So what does a tally chart tell you? Turn to your partner and find out if they agree with you.** Share ideas, agreeing that the marks on the tally chart tell you how many.



Homework Guide 2

Year 2, Unit 7, Week 3, Lesson 2:
Coin tally



Overcoming Barriers

- The most common error is forgetting the negative condition, 'not'. Remind children to use the labels on the Carroll diagram to help them describe their items. Some children benefit from keeping an object that meets the positive condition in their hand and checking new objects against it. Keeping a blue triangle in their hand helps to identify that a yellow triangle must go in the 'not blue' section because it is not a blue triangle.