Litter problems

Annotation

Yusuf poses a comparison question that he can answer using statistical investigation. He collects multivariate category data (the variables are the different places around the school and the different types of litter). He uses a spreadsheet programme to create two bar graphs to analyse the data.

Yusuf discusses which display is the most appropriate to answer his questions.Yusuf communicates his findings in context. He clearly answers his original question and suggests possible reasons for his findings.

Problem: Litter problems

The students in Room 7 are participating in an inquiry unit about their local environment. The teacher asks them to complete the following task:

Conduct a statistical investigation within a specific area of your study. Pose an appropriate question, plan how to collect your data, then carry out the investigation and communicate your findings.

Student Response

Yusuf's work sample is as follows:

> **What areas of our school have the biggest litter problem?**
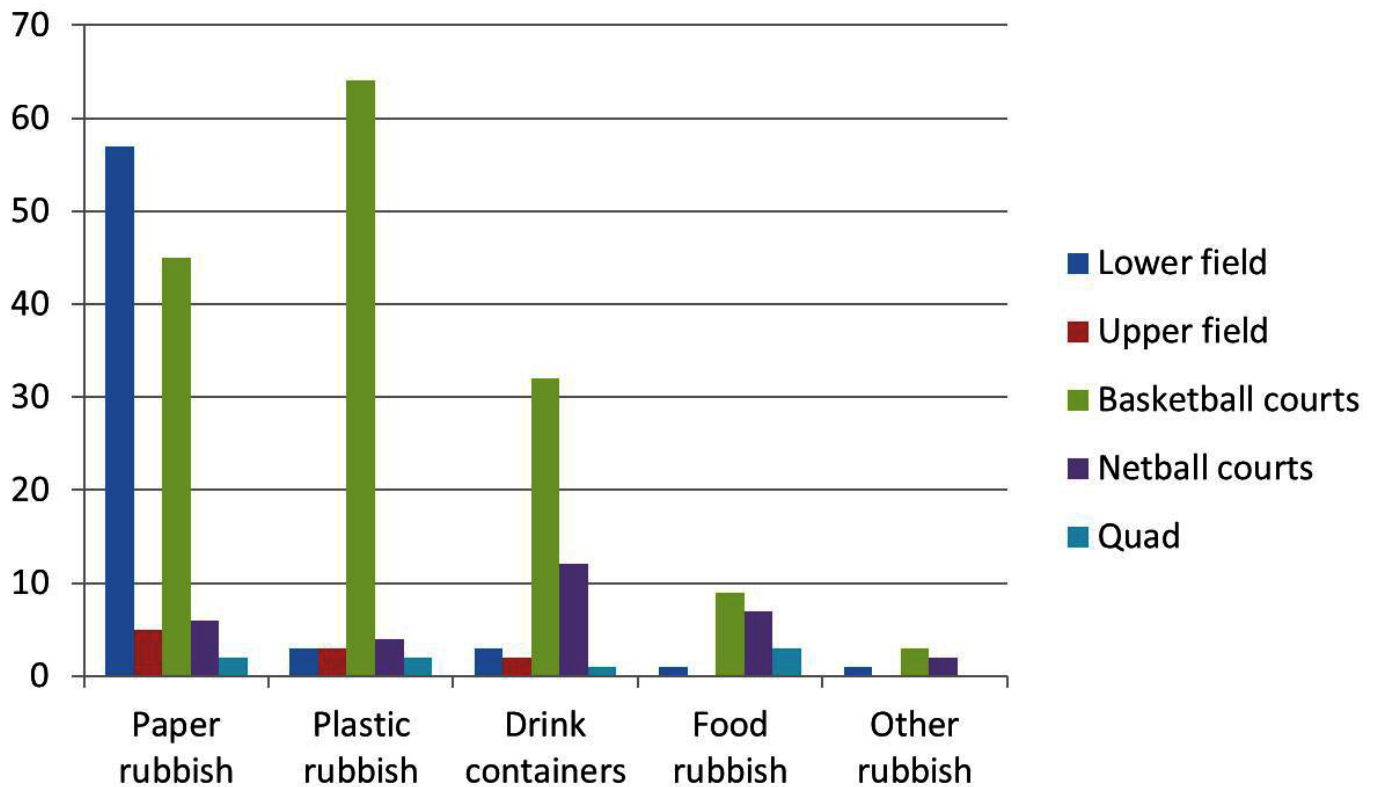
Our plan:

1. Divide the school into 5 main areas
   - Lower field   Upper field   Basketball courts
   - Netball courts   Quad
2. After lunch on Friday collect all the rubbish into 5 separate rubbish bags.
3. Sort the rubbish from one area at a time. Sort the rubbish into groups of type of rubbish.
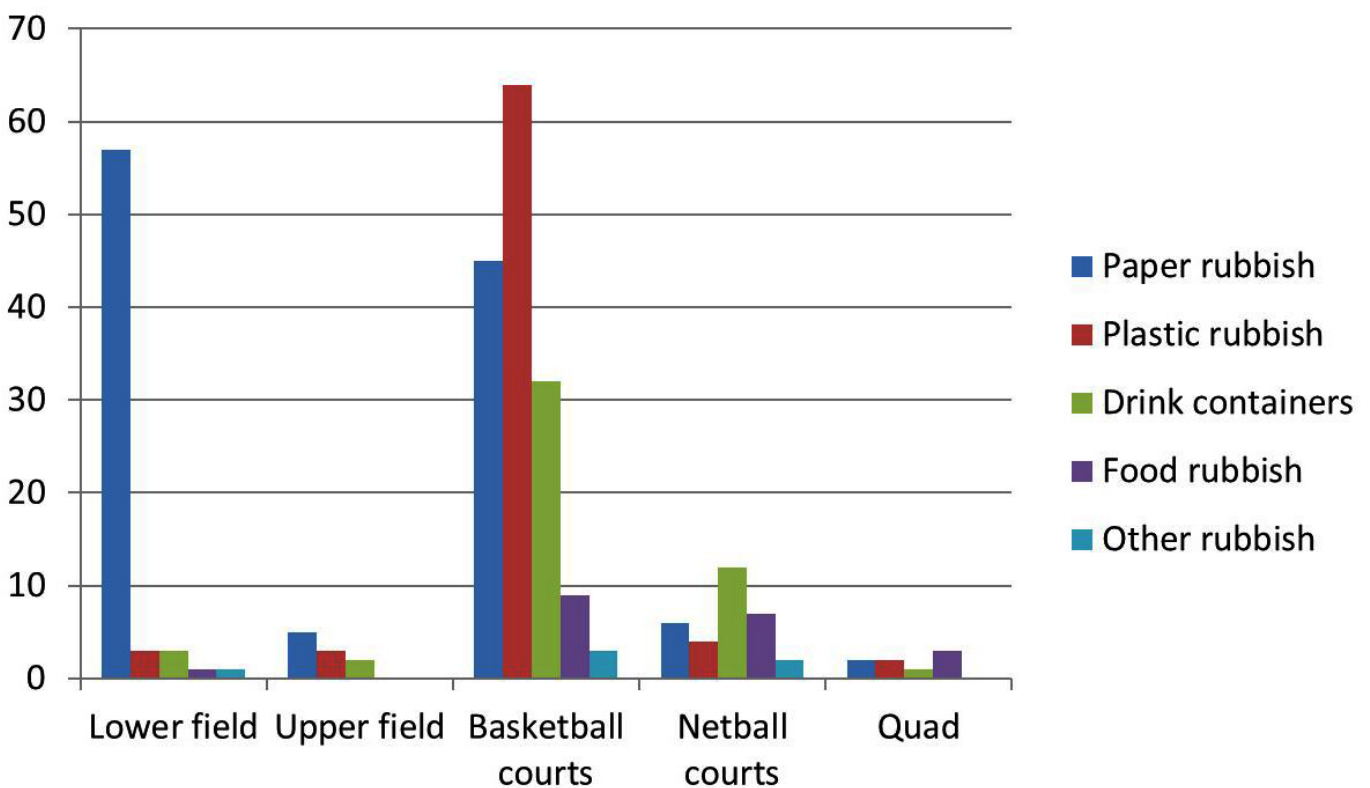4. Tally and total the results.

Results:

	Paper Rubbish	Plastic Rubbish	Drink containers	Food rubbish	Other rubbish	TOTAL
Lower field	57	3	3	1	1	65
Upper field	5	3	2	0	0	10
Basketball courts	45	64	32	9	3	153
Netball courts	6	4	12	7	2	31
Quad	2	2	1	3	0	8
TOTAL	115	76	50	20	6	267

Types of Litter in Our School – by Area

Areas of Litter in Our School – by Litter Type

Conclusion

The first graph shows us that paper and plastic rubbish and drink containers are the most common types of litter.

The second graph shows us that the basketball courts have the most litter of all. There is a lot of paper litter on the lower field, but we noticed when counting the data that almost all the paper in this area came from the same book that had been ripped apart.

The answer to our question is that the basketball courts area has the biggest litter problem. This might be because the tuck shop is right beside this area.

Teacher: Can you tell me what you did?

Yusuf: After we counted up all the rubbish, we made a table with all the totals in it.

Teacher: Why did you do it that way?

Yusuf: Because then it made it easy to type into the computer.

Teacher: Can you tell me anything more?

Yusuf: We put all the numbers into the computer and made a bar graph. But the first bar graph didn't answer our question, so we switched the rows and columns, and that is how we made the second bar graph. This graph showed all the litter in the different areas more clearly.

Teacher: What did you find out?

Yusuf: Definitely that the basketball courts have a big litter problem!