A U T H E N T I C   T A S K

STATEMENT OF THE PROBLEM

We learn best when we can concentrate on what we are learning and we are not distracted by unnecessary interruptions. At our school, we want to reduce the amount of teaching and learning time that is wasted due to interruptions so that all students get the most out of their opportunities for thinking and learning. The best way to do this is to understand the different ways we are interrupted each day and to work out a method to help us keep track of these different interruptions.

INTERRUPTIONS GALORE – THE STORY

The Planning Stage

This Task was carried out with two of our Year 3/4 classes and two of our Year 5/6 classes. The whole school was informed of the Task, including the office, however we did not want to change anyone's initial behaviour to allow us to observe actual behaviours and then implement strategies for eliminating interruptions.

We posed the Statement of the Problem to the students and led a discussion of the ways that we could approach the task, guiding the students with questions, for example:

- What data should be collected (ie. What type of interruptions should be tracked? What are the different interruptions we can think of that happen during our day?)

- How will we collect the data?

- Who will collect the data?

The kinds of interruptions we identified with included calling out, unwanted talking, going to the toilet, late to class, announcements/visitors to class, mucking around, not listening and unavoidable (eg. medical emergencies).

From this discussion we developed a tally sheet on which daily interruptions would be recorded once they were classified at the end of each day, and a wall chart on to which we would transfer this data at the end of each week (see work sample 1).

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Doing the Task

The data collection and analysis could have been extended in a number of ways. It would have been useful to record the time of the interruptions on the chart, eg. 9:00am-10:00am, 10:00am-11:00am etc. Another option would be to colour code the interruption according to its urgency/necessity, eg. Green dot – necessary/unavoidable (sickness), Orange dot – could wait (until lunchtime, etc), Red dot – unnecessary/avoidable (calling out). These colour codes could also be given a numerical rating, eg. Green = 0 pts, Orange = 1 pt, Red = 2 pts. Children who consistently and continuously cause interruptions may have been given their own code to identify them in the final analysis! These options can be included based on an assessment of the level of students' skills and understanding, each of them providing a greater amount of mathematical data to be analysed and represented.

During the task we discussed trends and areas that needed improvement as they became obvious and ways in which these could be overcome. Once the data was collected, we asked students to carry out a range of activities with the data, such as writing their own questions and devising their own mathematical tasks, own grade analysis, comparing grades, determining which days/times are the worst and why, looking at own grade practices and timetables and/or whole school practices and timetables, and development of a scoring rubric.

Year 5/6s manipulated their data in the following ways:

- The children were asked to identify the types of interruptions they felt had the greatest impact on their learning, with each child being given one red dot (3 pts) and two green dots (1 pt) to stick on a chart listing interruptions. They later completed a worksheet making use of this data (see work sheet 1).

- The children worked in groups to analyse one week's data each and report back to the class.

- The groups then wrote questions that related to their week and gave them to a different group to answer. In writing these questions, the emphasis was on thinking of questions which were 'fat' and so required a higher level of thinking and more complex analysis of the data.

- Comparisons were made between the weeks and similarities and differences were noted and commented on (see work sample 1).

- The students graphed the data in various forms and made observations, including working out averages and ratios over the four weeks and taking into account the different numbers of days of tracking in some of the weeks (see work sample 2)

Year 3/4s made use of their data in the following ways:

- The students collated their information and tabled the data, including totals and sub-totals. They graphed the data and explored ways of representing it. We encouraged the use of skip counting and multiplication as part of this process.

- We then discussed problems relating to the data which may have affected it.

- We developed a rubric to represent the children's use and representation of the data.

There were a number of problems which prevented us from creating ongoing comparisons and contrasts over the 31 days of the Task, and these included student and teacher lesson requirements; classroom teacher absences and CRTs not tracking interruptions; specialist teachers and grade share teachers inconsistently tracking all interruptions; and time constraints in terms of managing teaching and learning programmes as well as interruptions.

After the Task

It was our belief that responsible learners maximise their learning time and in doing this, they support each other in learning. This Task offered opportunities to achieve this by encouraging the children's awareness of interruptions in their classrooms. The Task also allowed for meaningful learning and higher order thinking and for the involvement of all students in using a range of knowledge, skills and strategies from different areas of mathematics as well as our school curriculum in general. Finally, it enabled students, teachers and the school community to work together, and was thus a valuable tool for bringing these groups closer, as well as making meaningful improvements to the quality of thinking and learning in our classrooms.

In our designing the Task, we identified various underlying objectives which we believe were achieved with significant success:

- The Task had significant practical application and outcomes – it assisted with the definition and recognition of the problem of frequent interruptions to our learning and provided tangible evidence of the need for an improvement in classroom behaviours and whole school systems, such as limiting toilet trips and announcements to particular times where possible.

- We have established relevant life skills, modelling how people solve real problems by taking children through the process of negotiating, planning, acting, analysing, reporting, evaluating and exploring alternatives.
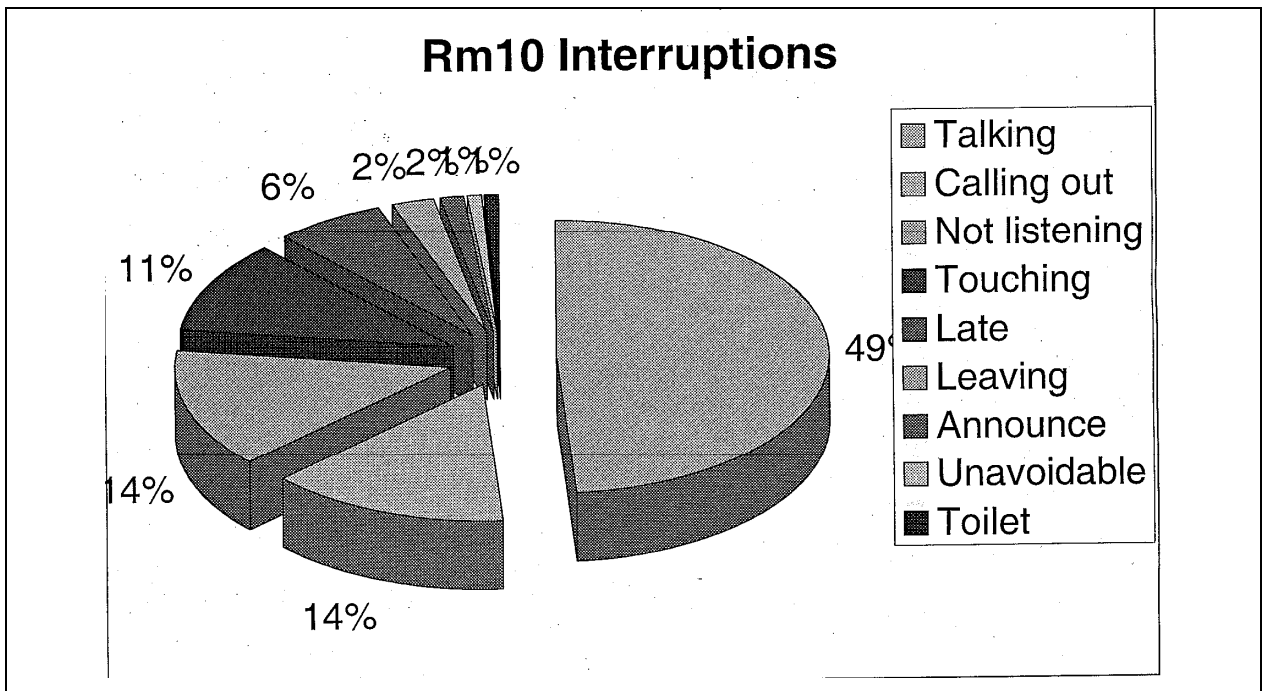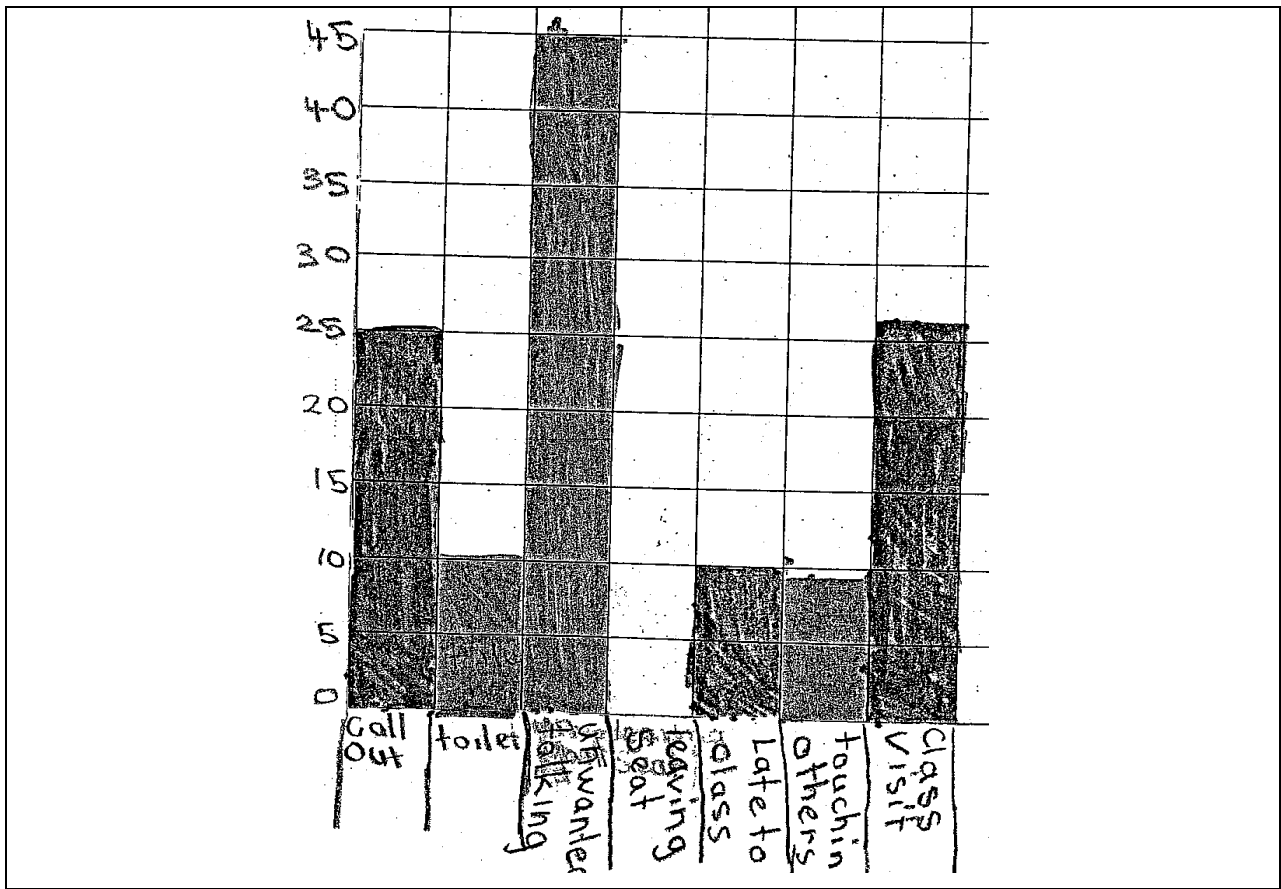
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AUTHENTIC TASK
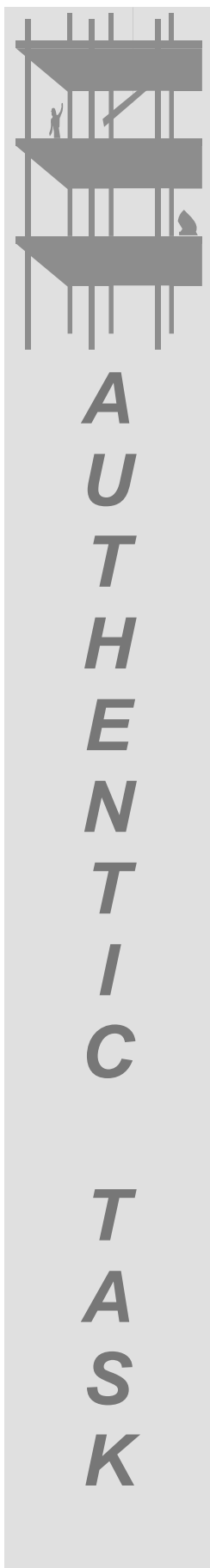
- In ensuring that all children make a contribution, we have challenged all of them by giving them an opportunity to think beyond their previous understanding.

- We have made use of knowledge, skills and strategies from various KLAs but specifically Mathematics.

- Children have used a variety of ways to represent their solutions and strategies, including diagrams, stories, graphs, tables, symbolic representations, written arguments, explanations and/or justifications.

- We have developed different problem-solving strategies and skills and constructed and evaluated conjectures while also developing higher order thinking skills.

- We have supported our values and social skills programmes, leading to positive outcomes which will improve quality learning time in classrooms.

Work sample 1: Whole class tally sheet

INTERRUPTIONS IN OUR CLASSROOM

	May 23	May 24	May 25	May 26 (Fri)	May 27	Total
Calling out	|\	||\	|\	NH|		
Going to the toilet	NH |	NH	NH |\	NH	NH |\ |\	
Unwanted talking	||||	||||	|||	NH	|||\	
Leaving Seat	|||	|||	|\	|||	NH|\ ||\ |	
Late to class/line	|	||	|\	||\	|\	
Announcements –visits to class from others	NH	NH	NH	|\	NH	
Unavoidable Interruptions					\	
Touching Others… "mucking around" etc.	|\	\		|||	|\	
Other interruptions		\			||\ |	
Total	23	25	21	28		

Work sample 2: Representing Data: Graphs

Rm10 Interruptions

Legend:
- Talking
- Calling out
- Not listening
- Touching
- Late
- Leaving
- Announce
- Unavoidable
- Toilet

Work sheet 1: Year 5/6 Worksheet

1. At our school the teachers and students were worried about the number of different interruptions to their learning. The students identified 9 main areas of concern. The results for Year 5/6A are listed on the table below. Students also voted on which interruption was the biggest problem for them. A big, red dot represented their vote. List the interruptions in order from the most votes to the least votes.

Type of interruption	Number of votes
Calling out	O
Unwanted talking	O O O O O O O O O O O O O O O O O O O O
Going to the toilet	
Leaving seat/room	
Late to class	O
Announcements/visitors to classroom	
Touching others/ fidgeting/mucking around	
Not listening or not following instructions	O O O O
Unavoidable	

2. Next, the students in 5/6A were given 2 green dots to identify their 2nd and 3rd votes. The table now looked like this. Each dot was then given a numerical value. The big, red dots have a value of 3 points. The small, green dots have a value of 1 point. Work out the total points given to each interruption. Use mathematics and show your working out to explain your thinking.

Type of interruption	Number of votes
Calling out	O *ooooooooooooooo*
Unwanted talking	O O O O O O O O O O O O O O O O O O O O O *ooooo*
Going to the toilet	
Leaving seat/room	*ooo*
Late to class	O*oooo*
Announcements/visitors to classroom	*oo*
Touching others/ fidgeting/mucking around	*oooooooooooo*
Not listening or not following instructions	O O O O *oooooo*
Unavoidable	

3. Grade 5/6B had the following results when they voted. What percentage of the vote did each type of interruption get? Use mathematics and show your working out to explain your thinking.

Type of interruption	Number of votes
Calling out	O O
Unwanted talking	O O O O O O O
Going to the toilet	O
Leaving seat/room	O O
Late to class	O O O O O
Announcements/visitors to classroom	O O O O
Touching others/ fidgeting/mucking around	O
Not listening or not following instructions	O O O
Unavoidable	

Activities produced as part of Scaffolding Numeracy in the Middle Years

4. Look at the table below. Mrs A. thinks it is disappointing that there were more interruptions in Week 3 than there were in Week 2. She says this shows there was not an improvement. Is that true? What do you think? Use mathematics and show your working out to explain your thinking.

Week Number	How many interruptions	How many days interruptions were tracked in that week
1	282	3 days
2	224	4 days
3	266	5 days
4	193	5 days

5. Compare the percentage results of Year 5/6A and Year 5/6B.