HIGHLANDS INTERMEDIATE

MATHEMATICS ACHIEVEMENT CHALLENGE - TIME BADGE

SECTION A

Select and complete THREE investigations out of FIVE from this section

1. Use the telephone book to calculate different time zones and how they affect the timing of international calls. Remember to consider daylight saving, personal events and the dateline.
   Produce a useful timetable for your family to use

2. Find out how an analogue clock measures time. Write an explanation illustrated with diagrams. Produce a series of diagrams that would help a younger child 'tell the time' clearly and easily.
   Invent a device for measuring time. Write an explanation of how it works. Is it accurate? Why? Why not? Justify your answer

3. What day were your born? Prepare a calendar showing the day and the month of your birth

4. On what day of the week will your birthday be in 20 years-time? Write an explanation to justify your answer

5. Investigate and describe how different cultures have measured and recorded time. Produce a chart outlining your findings

SECTION B

Select and complete THREE investigations out of SIX from this section.

1. Produce a diary of your school week from 0800 to 1530 each day, showing how you could spend your time (i.e. at 15 minute intervals). Examine and analyse how you spent your time, and record your findings by using a data table.

2. Design 10 different clock faces using different symbols for each one, and the same time of the day. Consider using Roman numerals, patterns of dots, Braille, codes, etc.
   Draw your clocks on a chart, and describe each pattern and design

3. How does Daylight Saving work? What effects does it have on different groups of people (e.g. farmers, sports' people, office workers), as well as your own life.
   Analyse your findings and draw conclusions about the use of Daylight Saving

4. Design and produce a chart comparing the relationship between digital, analogue and 24 hour time. Research the use of each method in everyday life and explain why it is used.
   Select 15 specific samples of time and illustrate how to convert one type of measurement to another.

5. Research, analyse and record the phases of the moon.
   Find out how long it takes for the moon to progress from a new moon to a full moon and back again.
   Produce a Moon calendar to demonstrate these concepts.

6. Evaluate the effectiveness of a sundial, hour glass, water clock, candle clock, analogue clock and a digital clock.
   Design a clock of your own, and write about its effectiveness in measure time accurately.