

## **MATHEMATICS ACHIEVEMENT CHALLENGES - SPORTS AWARDS**

### **SECTION A: You must complete THREE learning activities form this section.**

1. Investigate and report on whether tall students in your class are able to run faster, jump further, jump higher, throw further than shorter students.
2. Conduct a survey to establish the sports played by students in your class/syndicate/school. Draw conclusions from your survey.
3. Plan and map an orienteering course. Have your friends or class run the course. Draw a map of the course and evaluate its success.
4. Compile a record book or database of athletic or swimming records for two of the following:
  - a. Yourself
  - b. Students in your class or school
  - c. Other schools in your area
  - d. Sports' records: local, national, international
5. Conduct a survey to identify the favoured event by your school or local athletics or swimming sports. Determine and explain any differences between children of various ages.
6. Compare the sizes of areas needed to play the following games (2 per section)
  - a. Netball, tennis, padda tennis, volleyball, basketball
  - b. Soccer, rugby, hockey, league, touch rugby.

**SECTION B: You must complete THREE learning activities form this section.**

1. Design a game which can be played within the size of a netball court. On a hard surface. Invent and explain a scoring system, choose an innovative way to show how the game is played, (e.g. video, model, computer programme, photographs, database etc.).
2. Estimate the costs involved in playing a sport of your own choice.
  - a. Compare the costs for the two of the following:
  - b. Summer and winter sports
  - c. An indoor and outdoor version of the same sport
  - d. Individual and team
  - e. Two different sports that you are/or wish to be involved in.
3. Show how knowledge of geometry could be used to enhance a person's performance in any sports. Present your findings in an interesting manner.
4. Determine your level of fitness by using an established test (e.g. Otago fitness Test). Record your results. Prepare and carry out a fitness schedule for a period of one month. Record and chart your progress. Draw conclusions about the effectiveness of your programme.
5. Plan a balanced diet for a sport's person or a person preparing for a special sport's event. Consider the following;
  - a. Time frame
  - b. Energy content
  - c. Cost
6. Plan and conduct an in-depth investigation of your own choice, which is related to sports. You may wish to extend an idea or activity from another section. (NB: This investigation must have a strong, identifiable mathematics focus).

**SECTION C: You must complete TWO learning activities form this section**

1. Plan and cost a fitness circuit suitable for your class or school. Draw a site plan to scale or present your plan in another way.  
Predict and then investigate and analyse the nature of injuries that occur for one of the following over a four week period;
2. At school, local community, sports club or group, Accident and Emergency Department, local doctor, hospital or sports clinic. Record and present your findings. Make predictions from your data over a six month period related to costs involved, and loss of time.
3. Identify a sporting activity for students in your class, syndicate or school. Plan and carry out the event. Evaluate the success of your planning.
4. Plan and conduct an in-depth investigation of your own choice which is related to sports. You may wish to extend an idea or activity from another section. (NB: This investigation must have a strong, identifiable, mathematics focus