**ASCOT HIGH SCHOOL**

**MATHEMATICS DEPARTMENT**

SBA Ideas

1. What is the optimum angle to throw a Shotput/Discus? General Idea: Measure the angle at which different individuals throw the objects and their corresponding distances. Generate a table of results and graph a scatter graph to see if there is a pattern.
2. What is the effect of the run up speed on the distance covered in a long jump? Have different people take jumps, from stationary position, walk, quick walk, jog, run, and sprint and see how the run up speed affects the distance obtained in a long jump.
3. What polygonal shapes are best suited for a tiling project? The heart of this project is tessellations: Use geometry software etc. to explore what shapes tessellate and which don’t, Why do some tessellate and why some do not. Write up your results and produce some good complex patterns to boot.
4. Shopping: Many people do their shopping in urban centers as opposed to local shops. Does location affect price? Compare the prices in some favorite shopping areas in towns vs prices in local areas.
5. Measurement: what is the maximum area and perimeter that can be enclosed by a string of length A. How does optimizing area affect perimeter and how does optimizing perimeter affect area?
6. What accounts for the difference in attendance patterns in upper streams vs lower streams in a particular grade ant a particular school?
7. Weighted Down: How does the amount of weight carried by an athlete affect their speed over a 50m distance?
8. Leaking faucet: What is the cost incurred per year if a faucet is left drip leaking?
9. Electricity saver: What is the effect of ironing once per week for a month vs ironing everyday
10. Is there a relationship between the hours spent studying and the grades obtained by a student. Examine two or three subjects
11. What is the optimal distance for shooting goals on a netball court?
12. You could also examine the goal scoring percentage of students based on their height
13. Is the penalty Spot the best place to score a goal? What is the relative probability of shooting from elsewhere on the field?

Other SBA Topics

1. Hire Purchase or Cash?

An explanation of the advantages and disadvantages of hire purchase, using data collected from at least two stores.

2. Sports Utility Vehicles versus Cars

Comparative analyses of the costs of different types of vehicles, considering fuel economy,maintenance and features.

3. KFC or Burger King

Investigating the cost of meal deals at two fast food outlets in Portmore or Spanish Town

4. Digicel or Lime

Investigating the cost of various call plans at two telecommunications organizations

5. Family structure and Honour roll

Investigating the impact of family structure (nuclear, single) on the academic performance (above 80% average in exams.

6. Transportation versus grades

Investigating the impact of means of transportation to school and grades (term average/exam average/class average) for particular subjects.

7. Studying and grades

Is there a relationship between the hours spent studying and the grades obtained by a student? Examine 2 or 3 subjects.

8. Goal scoring and location

Is the penalty spot the best place to score a goal? What is the relative probability of shooting from elsewhere on the field?

9. Surface Area: Designing the best package for

a) A manufactured product

b) Posting an article

10. Planning and Designing: a) the comparative cost of tiling a 3 bedroom house

b) The comparative cost of painting a house

c) The comparative cost of roofing a house with zinc.

11. Floor Planning: a) The ideal use of space in a kitchen

b) The ideal use of space in a bedroom

c) The ideal use of space in a classroom

12. Getting to Ascot High by 7:25: What is the approximate time to leave my community?

13. Travelling by different routes from Point A to Ascot High School: a) which takes the least time?

b) Which is the most cost effective?