♦ *GUIDELINES FOR THE SCHOOL-BASED ASSESSMENT*

RATIONALE

School-Based Assessment (SBA) is an integral part of student assessment in the course covered by this syllabus. It is intended to assist students in acquiring certain knowledge, skills and attitudes that are critical to the subject. The activities for the School-Based Assessment are linked to the "Suggested Practical Activities" and should form part of the learning activities to enable the student to achieve the objectives of the syllabus.

During the course of study of the subject, students obtain marks for the competencies they develop and demonstrate in undertaking their SBA assignments. These marks contribute to the final marks and grades that are awarded to students for their performance in the examination.

The guidelines provided in this syllabus for selecting appropriate tasks are intended to assist teachers and students in selecting assignments that are valid for the purpose of the SBA. These guidelines are also intended to assist teachers in awarding marks according to the degree of achievement in the SBA component of the course. In order to ensure that the scores awarded by teachers are not out of line with the CXC standards, the Council undertakes the moderation of a sample of SBA assignments marked by each teacher.

School-Based Assessment provides an opportunity to individualise a part of the curriculum to meet the needs of students. It facilitates feedback to the students at various stages of the experience. This helps to build the self-confidence of the students as they proceed with their studies. School-Based Assessment further facilitates the development of critical skills and that allows the students to function more effectively in their chosen vocation. School-Based Assessment' therefore, makes a significant and unique contribution to the development of relevant skills by the students. It also provides an instrument for testing them and rewarding them for their achievements.

The Caribbean Examinations Council seeks to ensure that the School Based Assessment scores are valid and reliable estimates of accomplishment. The guidelines provided in this syllabus are intended to assist in doing so.

THE PROJECT

The project may require candidates to collect data or demonstrate the application of Mathematics in everyday situations.

The activities related to the Project should be integrated into the classroom instruction so as to enable the candidates to learn and practice the skills needed to complete the project.

Some time in class should be allocated for general discussion of project work; allowing for discussion between teacher and student, and student and student.

<u>Role of the Teacher</u>

The role of the teacher is to:

1. Guide students in identifying suitable topics for the project for the School Based Assessment.

2. *Provide guidance throughout the project and guide the candidate through the SBA by helping to resolve any issues that may arise.*

3. *Ensure that the project is developed as a continuous exercise that occurs during scheduled class hours as well as outside class times.*

4. *Assess the project and record the marks. Hardcopies of the completed documents should be kept by both the teacher and the student. The teacher should use the mark scheme provided by CXC and include comments pertinent to the conduct of the assessment.*

Assignment

The School Based Assessment consists of ONE project to be marked by the teacher in accordance with CXC guidelines.

ASSESSMENT CRITERIA

The project will be presented in the form of a report and will have the following parts.

1. Project Title
2. Introduction
3. Method of Data Collection
4. Presentation of Data
5. Analysis of Data
6. Discussion of Findings
7. Conclusion

It will be marked out of a total of 20 marks and the marks will be allocated to each task and profile as outlined below.

Project Descriptors	Mark			
	K	C	R	Total
Project Title				**1**
• Title is clear and concise and relates to a real-world problem	1			
Introduction				**4**
• Objectives are clearly stated	1			
• Comprehensive description of the project		2		
• Limited description of the project		(1)		
• Detailed contents page with page numbers	1			
Method of Data Collection				**2**
• Data collection method is clearly described, appropriate and without flaws		2		
• Data collection method is stated		(1)		
Presentation of Data				**5**
• Data is accurate and well organised		2		
• Data is presented but is not well organised		(1)		
• Tables/graphs included, correctly labelled and used appropriately		2		
• Tables/graphs included		(1)		
• Accurate use of mathematical concepts	1			
Analysis of Data				**2**
• Detailed analysis done which is coherent			2	
• Limited analysis of findings			(1)	
Discussion of findings				**2**
• Statement of findings clearly stated			1	
• Statement of findings follows from data collected			1	
Conclusion				**2**
• Conclusion was based on findings and related to the purpose of the project			2	
• Conclusion related to the purpose of the project			(1)	
Overall Presentation				**2**
• Information was communicated logically using correct grammar	2			
• Information was poorly organised or difficult to understand at times	(1)			
Maximum for each profile	**6**	**8**	**6**	**20**

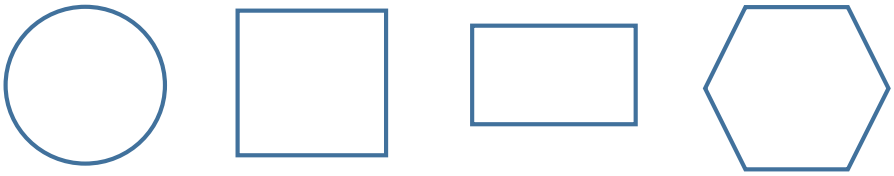
EXEMPLAR

Project Title: Designing a Basketball Hoop - Why Use a Circle?

Introduction: The purpose of this project was to determine the most suitable shape for a basketball hoop. The number of goals scored using the traditional hoop was compared to the number scored using square, rectangular and hexagonal hoops.

Data Collection: The area enclosed by the circular hoop was calculated and hoops were made using frames to enclose an area. The dimensions of the frames were calculated to ensure that a standard basketball could pass through each frame.

The area enclosed by a standard basketball hoop is 1641 cm^2. Efforts were made to use dimensions which would give this approximate area. The hoops in the different shapes were made with the enclosed areas shown.



Circle	Square	Rectangle	Hexagon
1641 cm^2	1640 cm^2	1640 cm^2	1644 cm^2

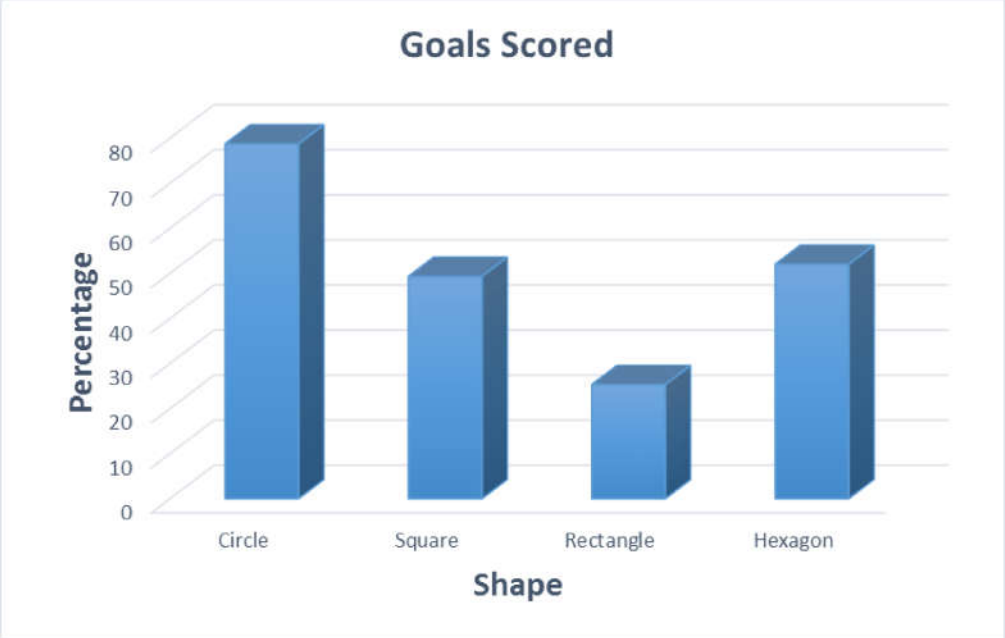
Data Collection Sheet

Name of Student: _____	
Shape	**No. of goals**
Circle	
Square	
Rectangle	
Hexagon	

Presentation Data: The table below shows the number of goals scored by each student, using of each of the hoops. Each student made 25 goal attempts for each shape. Hence, there were a total of 300 goal attempts made.

	Number of Goals Scored				
Student	**Circle**	**Square**	**Rectangle**	**Hexagon**	**Total**
Alan	22	14	09	15	**60**
Briana	20	12	06	10	**48**
Chris	17	11	04	14	**46**
Total	**59**	**37**	**19**	**39**	**154**
% success by shape	**78.7**	**49.3**	**25.3**	**52.0**	
% of scored goals (out of 154)	**38.3**	**24.0**	**12.3**	**25.3**	

The graph below shows the percentage of goals scored for each of the shapes.



Analysis of Data: The data collected from the experiment revealed that of the three students, Alan scored the most goals and Chris the least. Although some students were more successful in scoring, for each student, the most goals were scored with the standard basketball hoop which was in the shape of a circle where the success rate was 79 percent. Overall, out of the 154 goals scored 38.3 percent were using the circle, 25.3 percent with the hexagon, 37 percent with the square and 24 percent with the rectangle.

Discussion of Findings/ Conclusion:	While it is possible to construct a basketball hoop using many different shapes, all shapes will not give the same results. A rectangular shaped hoop is the least suitable shape and the circular hoop, the most preferred. Hence, in constructing a basketball hoop, the most appropriate shape to ensure success in scoring goals is a circle.

Procedures for Reporting and Submitting the School Based Assessment

Teachers are required to record the mark awarded to each candidate under the appropriate profile dimension on the mark sheet provided by CXC. The completed mark sheets should be submitted to CXC no later than April 30 of the year of the examination.

Note: The school is advised to keep a copy of the project of each candidate as well as copies of the mark sheets.

Teachers will be required to submit to CXC copies of the projects of a sample of candidates as indicated by CXC. The sample will be re-marked by CXC for moderation purposes.

Moderation of School Based Assessment

The candidate's performance on the project will be moderated. The standard and range of marks awarded by the teacher will be adjusted where appropriate. However, the rank order assigned by the teacher will be adjusted only in special circumstances and then only after consideration of the data provided by the sample of marked projects submitted by the teacher and re-marked by CXC.

PAPER 032

(a) *This paper consists of two questions based on topics from any section or combination of different sections of the syllabus. The duration of the paper is **1 hour**.*

(b) *All questions are compulsory and will require an extended response.*

(c) *The paper carries a maximum of **20** marks. Marks will be awarded for Knowledge, Comprehension and Reasoning as follows:*

*Knowledge: the recall of rules, procedures, definitions and facts; simple computations. (**6** marks)*

*Comprehension: algorithmic thinking, use of algorithms and the application of algorithms to problem situations. (**8** marks)*

*Reasoning: translation of non-routine problems into mathematical symbols; making inferences and generalisations from given data; analyzing and synthesising. (**6** marks)*