

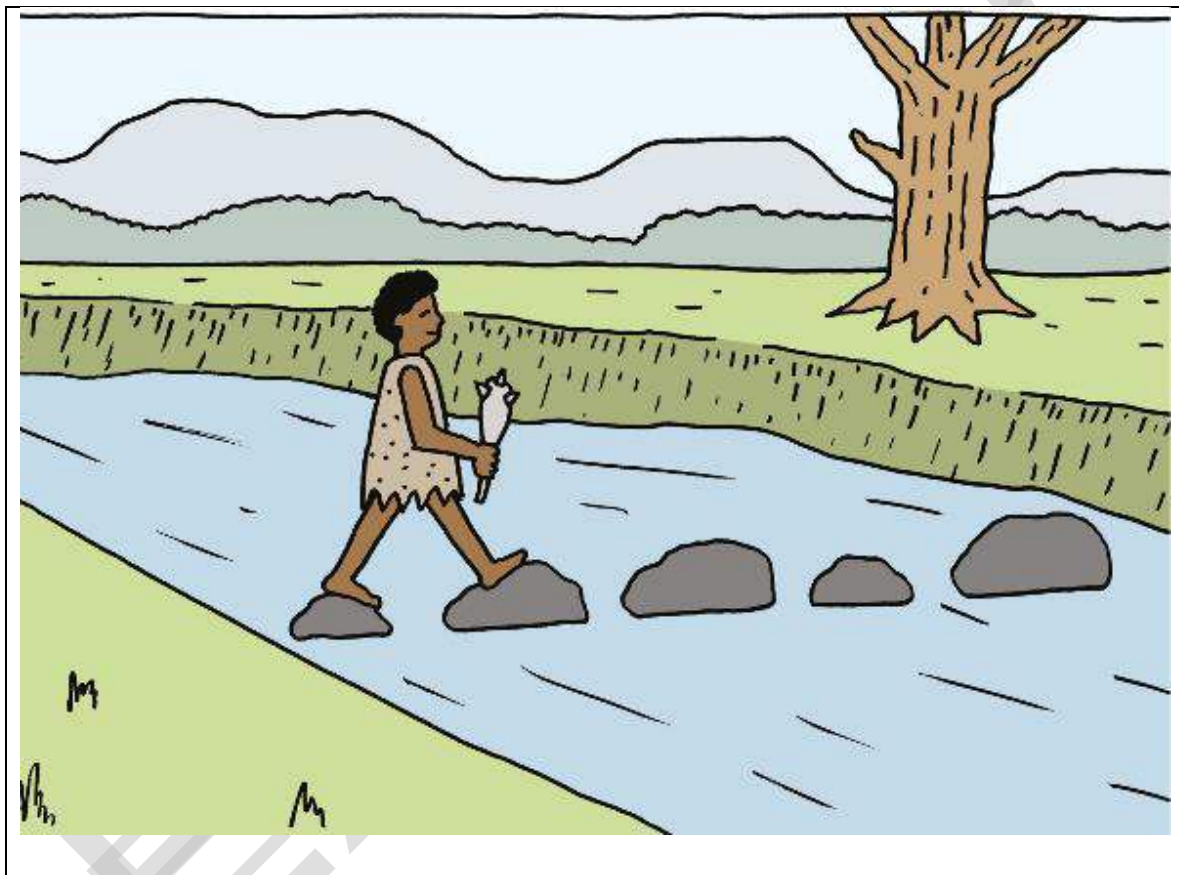


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TECHNOLOGY GRADE 9 PRACTICAL ASSESSMENT TASK 1 MARKING GUIDELINES TERM 1 2023

TOPIC: Structures

CONTEXT: Community issues - The Contractors



Allocation of marks

SIKLL	MARKS
Investigations	15
Design	20
Make	35

1. INVESTIGATION

1.1	People need to cross the wide river on foot every day, but it is dangerous because of floods and crocodiles, and it takes very long to walk through the water. People in wheelchairs cannot cross the river at all.	(1)
1.2	Build a bridge to cross the river, or use boat/ferry that is connected to a cable that spans the width of the river. The bridge is a better idea, as it would be very dangerous to cross the river on a boat when it is in flood.	(2)
1.3	A. A beam and column bridge The bridge is for cars and people Disadvantage Pillars can be damaged by flood water. Advantage It is stable and would not sway It can be long if many pillars are used.	(2)
	B. An arch bridge For Cars Disadvantage Too expensive to build Advantage It is stable and would not sway	(2)
	C. A truss bridge For cars and people Disadvantage Cannot be made long without using pillars in the river. Advantage Strong and can made to be very high	(2)
	D. Suspension bridge For cars and people Disadvantage It uses pillars that can sway away in the water and pillars can be damaged by floods/ Cannot be made long without using pillars in the river. Advantage Can be very strong	(2)

TECHNOLOGY GRADE 9 PAT1 MARKING GUIDELINES

TERM 1 2023

	E. Cantilever bridge For cars and people Advantage Strong and stable and would not sway Disadvantages Cannot be made long without using pillars in the river.	(2)
	F. A cable-stay bridge of the harp shape For cars and people Disadvantage Pillars in water can be damaged by floods Advantage Strong and stable, would not sway away.	(2)

[15]

2. DESIGN

2.1 Design brief

	0 mark	1 mark
Design brief	The design brief is not clear.	The design brief clearly explains what the structure will do.

(1)

2.2 Specifications

- The bridge has to help the community. For example, you can employ local people to work on the bridge and train them while they work on the project. That way, they will have good skills that will help them to find work when the project ends
 - The bridge has to be built according to budget, including all labour costs.
 - It has to be safe for all people to use it to cross the river.
 - The bridge has to be user-friendly for disabled and older people.
 - The material to be used to build the bridge has to be stated.
- (Any other relevant answer)

(3)

TECHNOLOGY GRADE 9 PAT1 MARKING GUIDELINES

TERM 1 2023

2.3

	0	1-2 marks	3-4 marks	5-6 marks
Initial ideas	No sketch	Only 1 or 2 irrelevant sketches are given	2 sketches are drawn but only 1 is relevant	2 sketches are drawn and both relevant

(6)

2.4

	0	1 mark	2 marks	3 marks
Final idea	No sketch and No reason for the selection of the final idea	Only irrelevant sketch of final idea and irrelevant reason for selection of the final idea.	A final idea was drawn but the reason for the selection of final idea is partially correct.	A final idea is drawn and relevant reasons for the selection of the final idea are given.

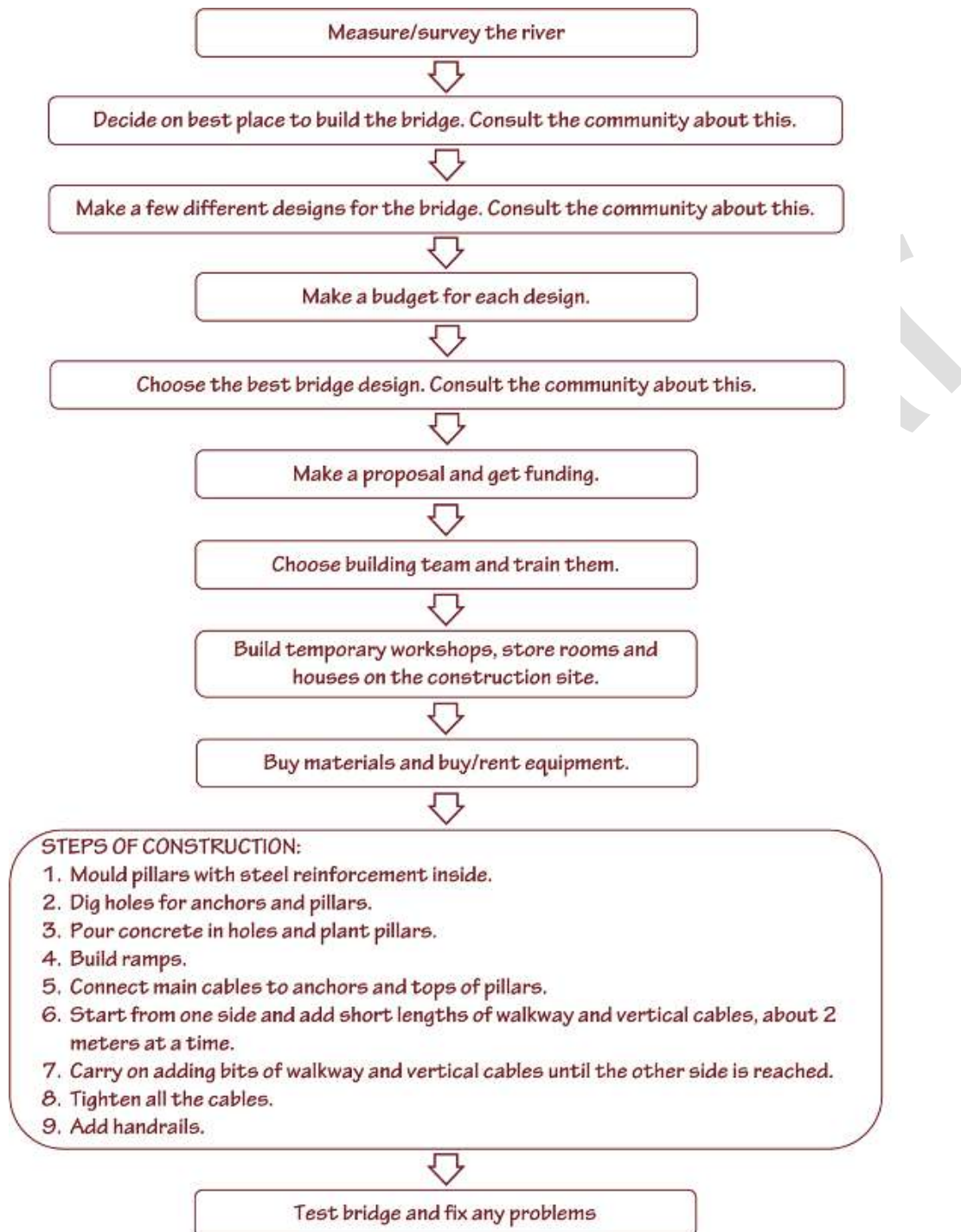
(3)

2.5

Descriptors	Possible Marks	Obtained
Correct placement of views: Front View Top View Side View	1 1 1	
Correct scale/measurements for each drawing	3	
Line work and neatness	1	
TOTAL	7	

3.1 Flowchart of the process you will follow to build your model

(10)



Or any other correct flow chart.

TECHNOLOGY GRADE 9 PAT1 MARKING GUIDELINES

TERM 1 2023

3.2 MARKING GUIDELINES FOR THE MODEL

5 Outstanding Achievement	4 Meritorious	3 Adequate	2 Moderate	1 Not achieved	Mark Achieved ---/5
Demonstrated an outstanding understanding of the making process and personal role.	Shows a very good understanding of the making process and personal role.	Shows a general understanding of the making process and personal role.	Shows some understanding of the making process and personal role.	Shows little understanding of the making process and personal role.	
Outstanding evidence of incorporating strengthening techniques and properties of material	Admirable evidence of incorporating strengthening techniques and properties of material	Adequate evidence of incorporating strengthening techniques and properties of material	Moderate evidence of incorporating strengthening techniques and properties of material	No evidence of incorporating strengthening techniques and properties of material	
Outstanding correlation between the model, the design brief, and specifications	Admirable correlation between the model, the design brief, and specifications	Adequate correlation between the model, the design brief, and specifications	Moderate correlation between the model, the design brief, and specifications	No correlation between the model, the design brief, and specifications	

TECHNOLOGY GRADE 9 PAT1 MARKING GUIDELINES

TERM 1 2023

Shows outstanding intelligence use of tools and materials.	Takes care when working, using tools and materials safely and accurately to scale	Takes reasonable care when working, using tools and materials safely and accurately to scale.	Takes some care when working, using tools and materials safely and accurately to scale.	Not able to use tools and materials safely and	
Produced an outstanding working model accurately to scale	Produced an excellent working model accurately to scale	Produced a good working model accurately to scale.	Produced a satisfactory working model accurately to scale.	Produced a poor working model not accurately to scale.	
TOTAL MARK _____/25					

Example

Exemplar