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TECHNOLOGY GRADE 9 PRACTICAL ASSESSMENT TASK 1

TOPIC: Structures

CONTEXT: Community issues - The Contractors



SCHOOL : _____

CLASS : _____

SURNAME AND NAME : _____

Allocation of marks

SKILLS	MARKS ALLOCATED	MARKS OBTAINED
1. Investigation	15	
2. Design	20	
3. Make	35	

TECHNOLOGY GRADE 9 PRACTICAL ASSESSMENT TASK 1

1. INVESTIGATION (Week 4)**Date:** _____**Read the scenario below**

Rivers provide much-needed water for communities, but sometimes they can also make life difficult for people. During the rainy season, people from villages on one side of a river struggle to get to the other side of the river, if there is no bridge. Many of people in the village of Dundonald Next to Lusushwane River in Mpumalanga work on the other side of the river. The doctors, banks and shops that they need to visit are also on the other side.

School children cross this river to get to their schools, and the elderly have to walk through it once a month to collect grants. Usually, the villagers cross the river on foot, because the nearest bridge is very far away. But during the rainy season, when the river is in flooded, it becomes very dangerous. Some of the villagers have also seen crocodiles in the river. Everyone is scared of drowning or getting attacked by the crocodiles.

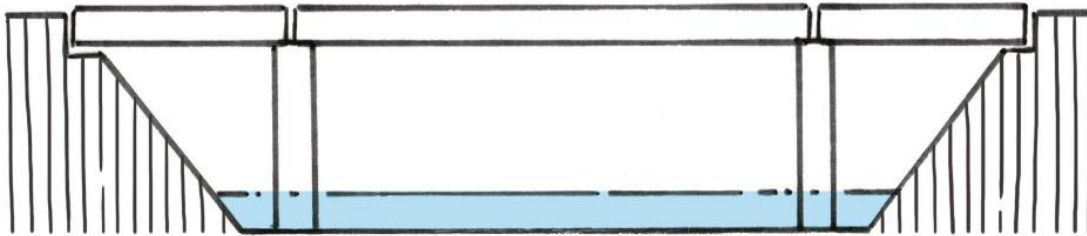
1	Identifying the existing problem		
		(Individual activity)	
	1.1	Explain the problem the villagers have. _____ _____ _____	(1)
	1.2	Suggest and write down 2 ways to help the community to cross the river. _____ _____ _____	(2)
2	Investigate structures to solve the problem		



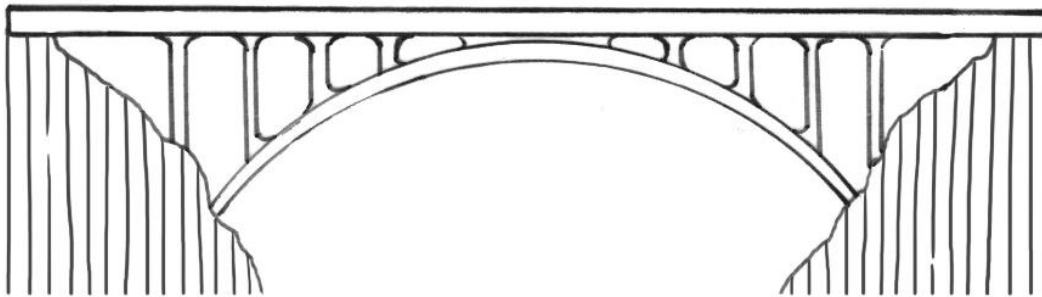
TECHNOLOGY GRADE 9 PRACTICAL ASSESSMENT TASK 1

Below are the drawings of different types of bridges. You learnt about these bridges in Grade 8. Do you remember the names? If you cannot remember, look at your Grade 8 book or ask your teacher to help you.

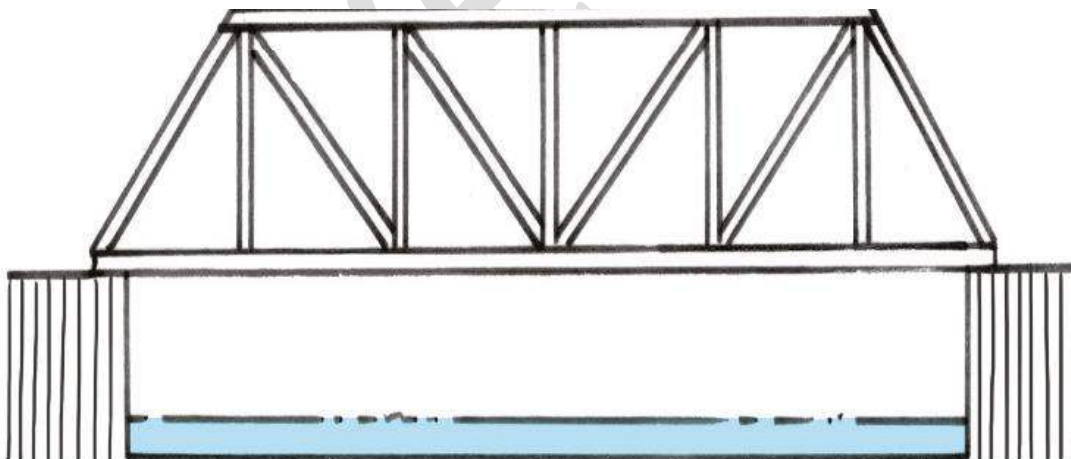
On this page and the next there are drawings of different types of bridges.



A. Beam and column bridge

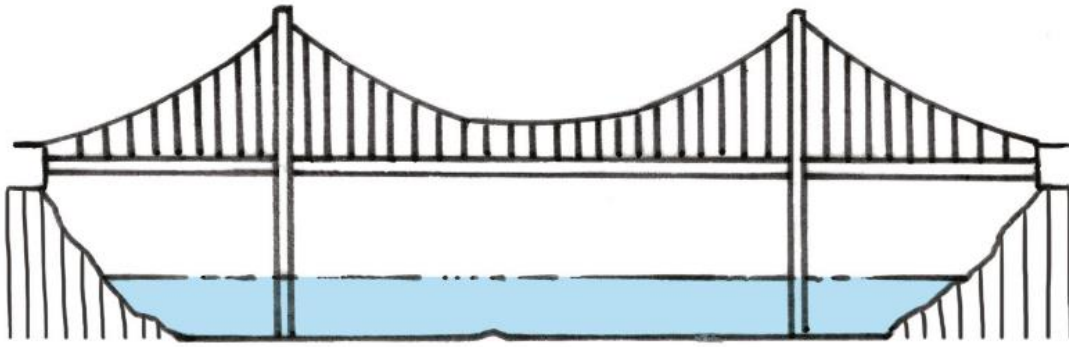


B. An arch bridge



C. A truss bridge

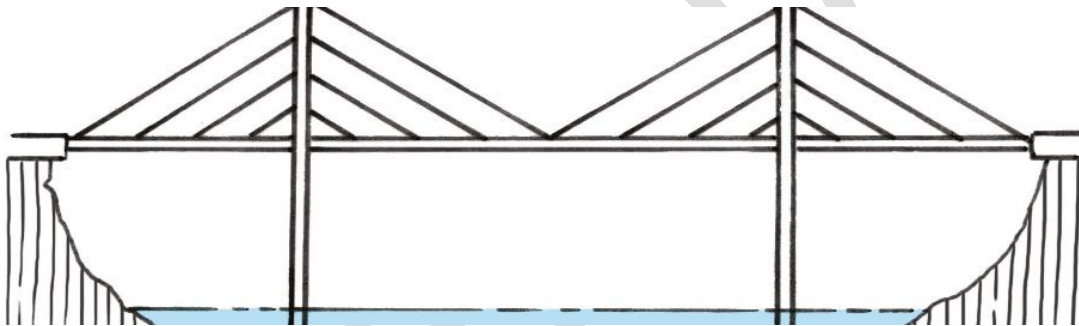
TECHNOLOGY GRADE 9 PRACTICAL ASSESSMENT TASK 1



D. A suspension bridge



E. A cantilever bridge



F. A cable-stay bridge of the harp shape

TECHNOLOGY GRADE 9 PRACTICAL ASSESSMENT TASK 1

2.1	Different types of bridges use different materials and construction methods, but they all have a similar function. Investigate and state at least one advantage and one disadvantage of each of the bridges if used for the community. A. A beam and column bridge (2) _____ _____ B. An arch bridge (2) _____ _____ C. A truss bridge (2) _____ _____ D. A suspension bridge (2) _____ _____ E. A cantilever bridge (2) _____ _____ F. A cable-stay bridge of the harp shape (2) _____ _____	
		[12]

Investigation Total Marks: 15



TECHNOLOGY GRADE 9 PRACTICAL ASSESSMENT TASK 1

2. DESIGN: (Weeks 5 & 6)

Date:

2	2.1	Write the design brief to explain what your structure needs to address. 	(1)
	2.2	Write down specifications for your project. 	(3)
	2.3	Sketch two initial ideas of the bridges to solve the problem.	(6)
		Idea 1	

TECHNOLOGY GRADE 9 PRACTICAL ASSESSMENT TASK 1

		Idea 2 Exemplar	
	2.4	Select the final idea, state reasons for your choice and draw it below.	(3)



TECHNOLOGY GRADE 9 PRACTICAL ASSESSMENT TASK 1

	2.5	Final idea drawing	
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Exemplar

TECHNOLOGY GRADE 9 PRACTICAL ASSESSMENT TASK 1

Working drawings:**2.6**

Draw the plan (or an aspect of the plan) using first angle orthographic projection with suitable scale, correct line types and dimensions.

(7)

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

Design Total Marks: 20

TECHNOLOGY GRADE 9 PRACTICAL ASSESSMENT TASK 1

3. Make (Weeks 6, 7 and 8)**3.1 Flow chart (Week 6)****Date:** _____

	3.1	Draw a flow chart of the process you will follow to build your model (Teams discuss how to proceed. Each learner draws a flow chart)	(10)



3.2 Making the model (Weeks 7 & 8)

Date: _____

Learners work in groups to make a model of a viable solution. It must be built neatly to scale, showing intelligent use of materials.

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	



All activities should be done under the supervision of the teacher.

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					

Make Total Marks: 35

PAT 1 TOTAL MARKS : 70 _____



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Exemplar

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