Impeesa

Natioinal Youth Leader Training

National Capital Area Council • Boy Scouts of America

Pioneering Projects

	20'	**16'**	**15'**	**14'**	**12'**	**10'**	**8'**	**7'**	**6'**	**5'**	**4'**	**3'**	**2'**
AERIAL TRAM		4						2	2	6	4		
CORACLE										(40 stakes)			
CAMP TABLE				4		4		24					
MONKEY BRIDGE					4					2	6		
DERRICK BRIDGE				1		2						2	10
4 LEG TOWER	4				8	8		4	16				
3 LEG TOWER	3		3	3		3		6	3	3	3	3	
SINGLE LOCK				5		8	2	2				24	
BRIDGE													
TOTALS	**4**	**3**	**5**	**3**	**16**	**10**	**23**	**2**	**38**	**23**	**15**	**9**	**37**

IMPEESA COURSE

AERIAL RUNWAY PROJECT

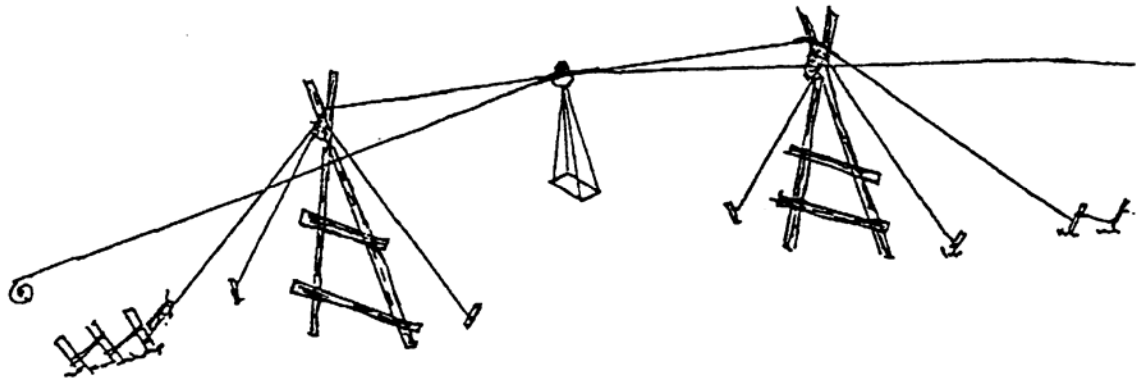
(Re Planning)

PROBLEM:

Your patrol wishes to bridge a body of water so you may transport passengers from side to side but you are short on spars and timber and cannot build a permanent bridge. Also, you want to control who crosses, so you decide on an aerial runway (pictured below). You will have about two hours to complete construction at a later time and you can obtain necessary materials from your troop guide/quartermaster. You might consider the alternatives if you have a large tree on one side to use for support.

Plan the construction of your runway in full detail. Write down your plans to include materials, specific series of steps in the construction, and the assignment of patrol members to complete each step.

(At the end of the time assigned by your Planning instructor, you will turn in your plan and all materials for review before actual project construction begins.)



IMPEESA COURSE

CORACLE PROJECT

(Re Planning)

PROBLEM:

Your patrol is on a hike and comes to a river which must be crossed. You do not have timber for a raft, but you do have a tarp. You decide to build a coracle (as pictured below) from materials at hand. You will have about two hours *to* complete construction at a later time and the tarp and cord can be obtained from your troop guide/quartermaster.

Plan the construction of your coracle in full detail. Write down your plans to include materials, specific series of steps in the construction, and the assignment of patrol members to complete each step.

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IMPEESA COURSE

PATROL CAMP TABLE PROJECT

(Re Planning)

PROBLEM:

Your patrol is planning to spend several nights in a campsite and want to have a comfortable table at which to eat your meals. You decide on a four-legged table (pictured below). You will have about two hours to complete construction at a later time and you can obtain necessary materials from your troop guide/quartermaster. Also, consider the alternative of using a canvass piece to make the table top, saving the need for many straight limbs.

Plan the construction of your table in full detail. Write down your plans to include materials, specific series of steps in the construction, and the assignment of patrol members to complete each step.

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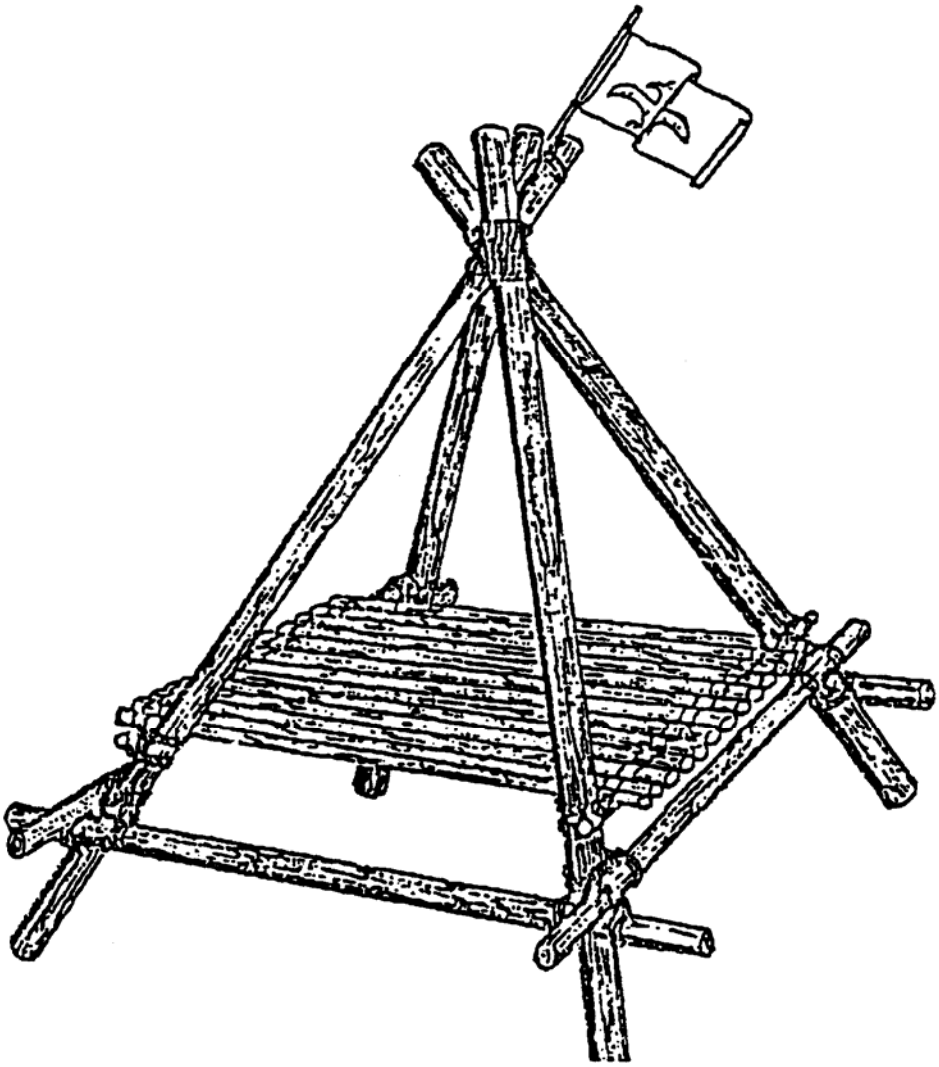

IMPEESA COURSE

MONKEY BRIDGE PROJECT

(Re Planning)

PROBLEM:

Your patrol wishes to bridge a deep chasm so that patrol members may cross from one side to the other! You have plenty of rope in different sizes, but not enough spars and timber to build a wooden bridge. You decide to build a "monkey bridge" (as pictured below). You will have about two hours to complete the construction at a later time and you can obtain the necessary materials from your troop guide / quartermaster.

Plan the construction of your bridge in full detail. Write down your plans to include materials, specific series of steps in the construction, and the assignment of patrol members to complete each step.

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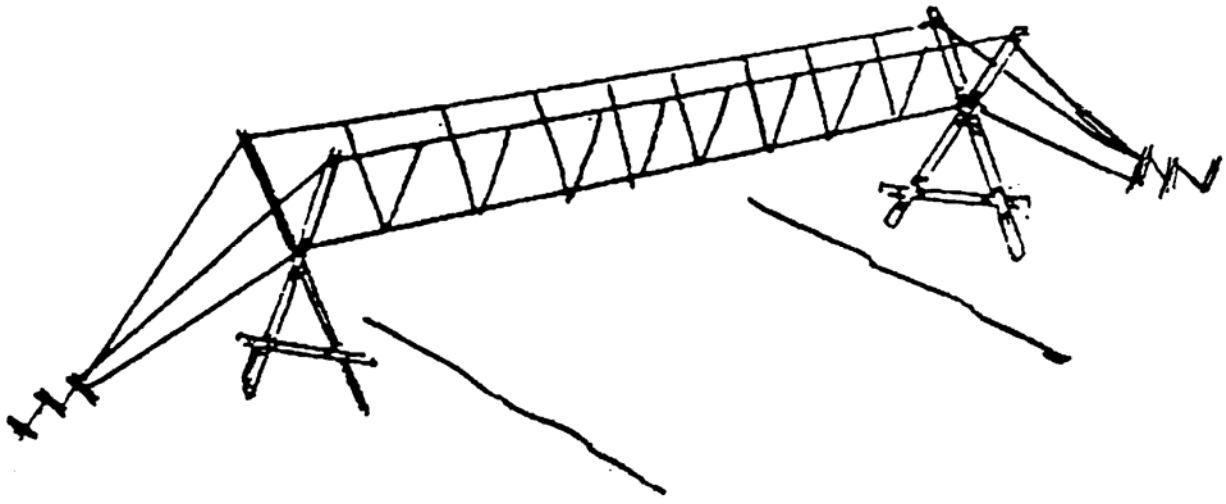


IMPEESA COURSE

REVOLVING DERRICK BRIDGE PROJECT

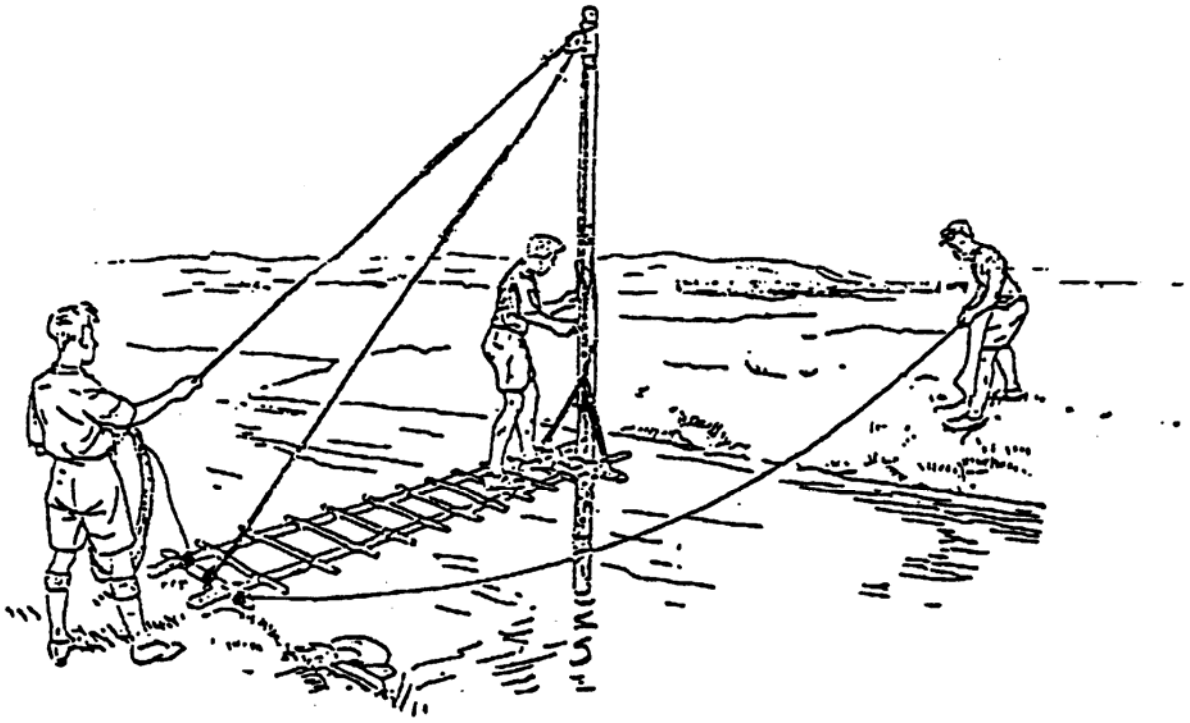
(Re Planning)

PROBLEM

Your patrol wishes to establish a small bridge to transport one patrol member at a time across a small stream, but you want to control access to your camp and do not want to build a permanent, open bridge. The revolving derrick bridge (pictured below) has been called to your attention. You will have about two hours to complete the construction at a later time and you can obtain the necessary materials from your troop guide/quartermaster.

Plan the construction of your bridge in full detail. Write down your plans to include materials, specific series of steps in the construction, and the assignment of patrol members to complete each step.

(At the end of the time assigned by your Planning instructor, you will turn in your plan and all materials for review before actual project construction begins.)



IMPEESA COURSE

OBSERVATION TOWER PROJECT

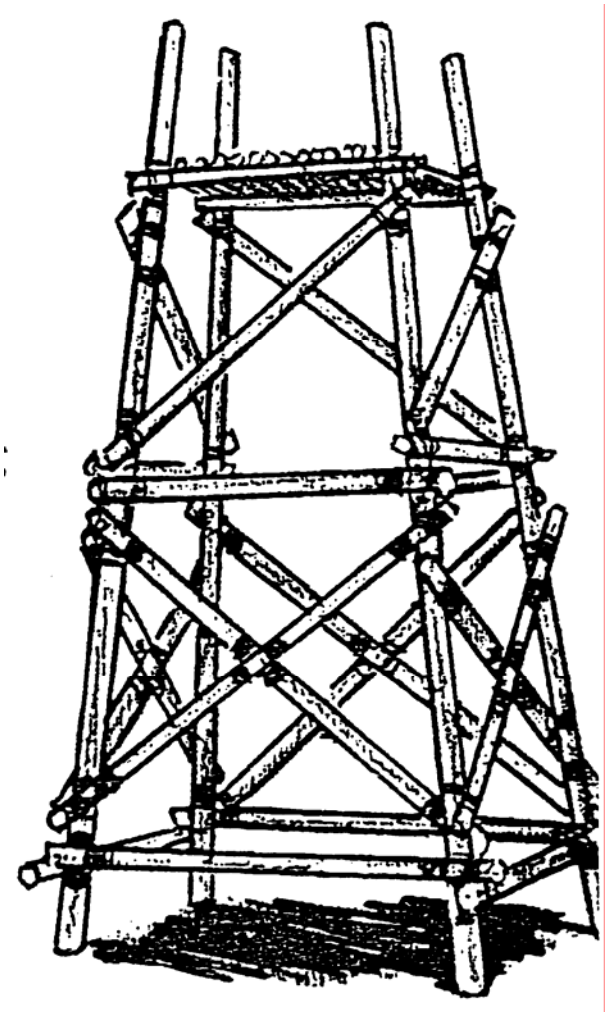
(Re Planning)

PROBLEM:

Your patrol wishes to build a raised platform from which an observer can view the camp area. It should be sturdy (four legs) and you have an adequate supply of spars and ropes provided by the staff. You will have about two hours to complete the construction at a later time. You will have about two hours to complete the construction and you can obtain necessary materials from your troop guide / quartermaster.

Plan the construction of your tower full detail. Write down your plans to include materials (spars, and ropes with sizes and any special items), specific series of steps in the construction, and the assignment of patrol members to complete each step.

(At the end of the time assigned by your Planning instructor, you will turn in your plan and all materials for review before actual project construction begins.)



IMPEESA COURSE

OBSERVATION TOWER PROJECT

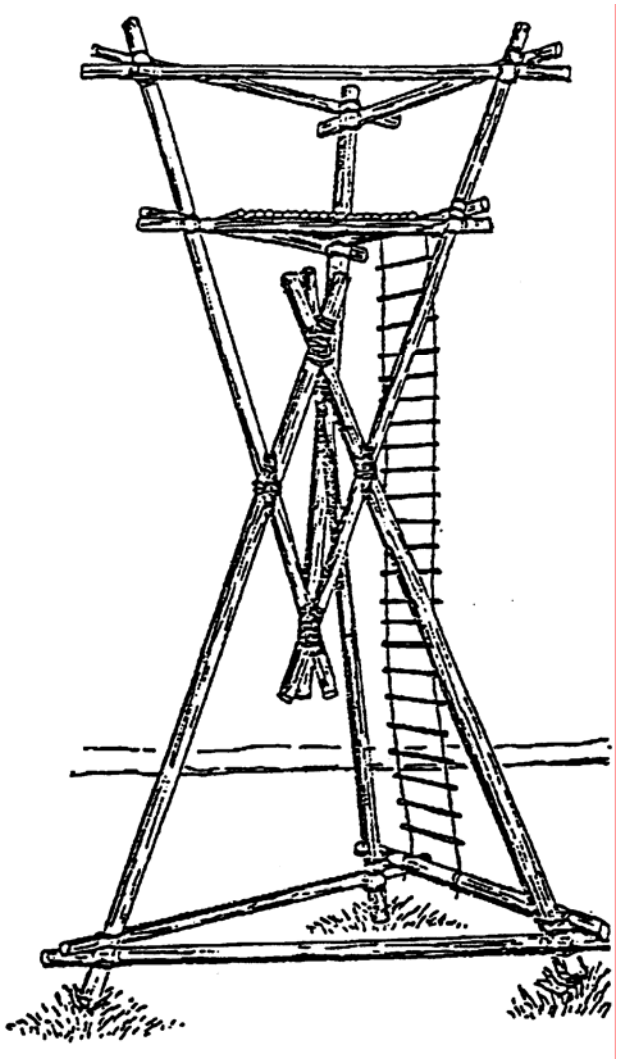
(Re Planning)

PROBLEM:

Your patrol wishes to build a raised platform from which an observer can view the camp area but the spars available to you are not long enough to achieve the height you want. You decide on the three legged tower (pictured below). You will have about two hours to complete the construction and you can obtain necessary materials from your troop guide / quartermaster.

Plan the construction of your tower in full detail. Write down your plans to include materials (spars, and ropes with sizes and any special items), specific series of steps in the construction, and the assignment of patrol members to complete each step.

(At the end of the time assigned by your Planning instructor, you will turn in your plan and all materials for review before actual project construction begins.)



IMPEESA COURSE

SINGLE LOCK TRESTLE BRIDGE

PROBLEM:

Your patrol has arrived at a gulley that will soon be flooded. You need to build some type of bridge across the gulley, and have decided on a single lock trestle bridge to do the job. The bridge must be tailored to fit the gap, while the trestle and footway units must be designed to fit snugly into each other. It is very important that the butts of the trestles be well heeled into the ground, and that they should lean inwards at an angle not greater than 45 degrees.

Plan the construction of your table in full detail, including a sketch. Write down your plans to include materials, specific series of steps in the construction, and the assignment of patrol members to complete each step.

(At the end of the time assigned by your Planning instructor, you will turn in your plan and all materials for review before actual project construction begins)

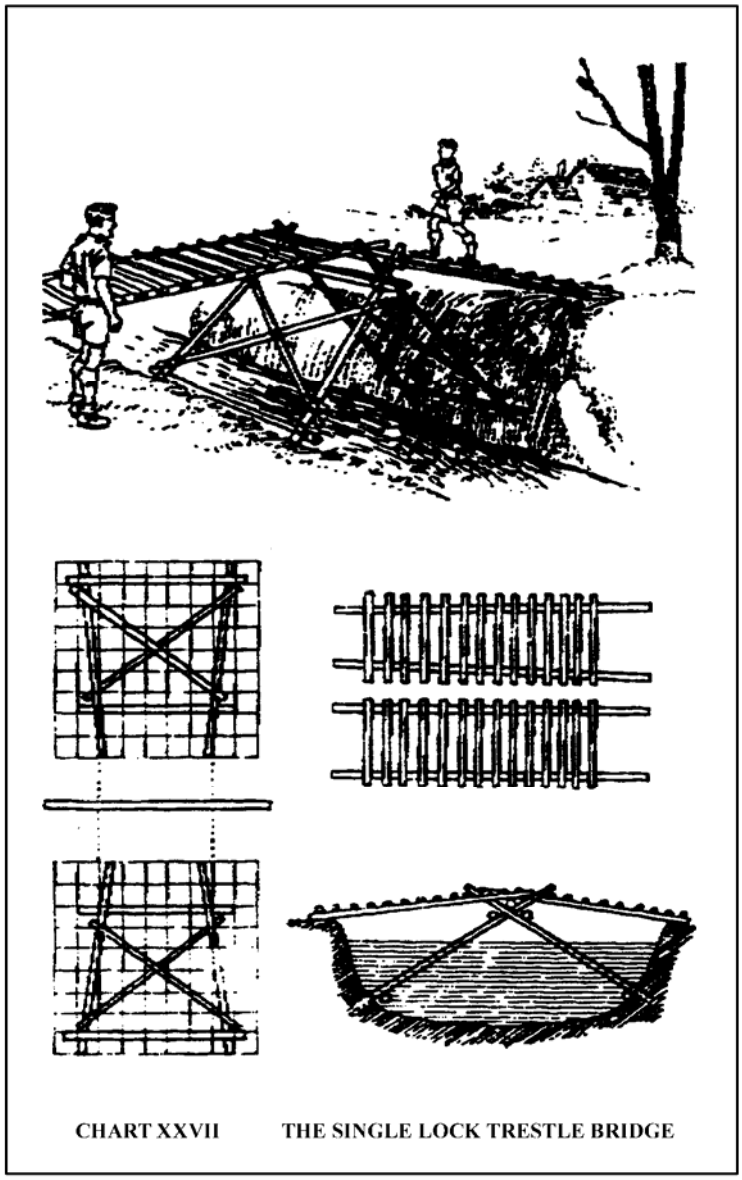


CHART XXVII THE SINGLE LOCK TRESTLE BRIDGE

SINGLE LOCK TRESTLE BRIDGE

MATERIAL LIST

QUANTITY	ITEM
4	12' Spars for footway
1	12' Spar for center support
8	8' Spars for trestle
2	7' Spars for trestle
2	6' Spars for trestle
24	2' Posts for footway
-	Binders twine to lash footway
16	18' lengths 1/2" line for lashing

THE SINGLE LOCK TRESTLE BRIDGE

This is yet another example of precision pioneering, to the extent that it must be tailored to suit the gap it is intended to bridge, while the trestle and footway units must be designed to fit snugly into each other. A spot of pegging out of spars on the ground is clearly indicated, and course the distance across the gap must be measured accurately.

It is of the greatest importance that the butts of the trestles should be well heeled into the ground, and that they should lean inwards at an angle not greater than 45 degrees. If the gap is too wide to be bridged by the single lock (as shown in the chart) the two trestles can be separated by another length of footway, which would make this a "double lock" bridge.

Again we are faced with the prospect of laying on one boring square-lashing after another in the construction of the footway. Perhaps this might be as good a time as any to introduce you to the so-called "SWIL" lashing, which can be applied in a matter of seconds and has been found quite suitable for short-lived pioneering structures where no great strain on the lashing is involved.

To prepare the lashing take a 36 ft length of 3 strand sisal twine and use a fisherman's know to turn it into an s strop. Bend a strong rubber band on one end of the strop with a larkshead knot made in the twine (not the bend). Loop the other end of the strop round any convenient spar and square-lash in the Japanese style with both parts of the twine together. Apply two or three frapping turns - enough to use up the end of the twine - then simply hook the bend once or twice round any convenient spar.

PIONEERING PROJECTS - AERIAL RUNWAY PROJECT
MATERIAL LIST

QUANTITY	ITEM
4	15' Spars for Uprights (4" Diameter)
2	6' Spars for Lower Crosspiece (3" Diameter)
2	4 1/2' Spars for Upper Crosspiece 0" Diameter)
6	4' Spars for Anchor Posts (3" Diameter)
4	3' Posts for Guy Line Posts (3"' Diameter)
1	60' Length 5/8" Rope for Runway
1	120' Length 1/4" Line for Pulley Line
4	12' Length 1/4" Line for Guy Line
4	15' Length 1/4" Line for Anchor Ropes
10	18' Length in Line for Shear Leg Lashing
1	35' Length 1/4" Line for Seat Rope
1	6' Length 1/4" Line for Choke Rope On Block Hook
2	Burlap Bags
I	Single Sheave Block for 5/8" Rope
1	Block & Tackle Set (Consisting of 1 Block with a Single Sheave & 1 Block with Double Sheaves)
I	Board 10" by 24" for Seat
-	Binders Twine

PIONEERING PROJECTS - CORACLE

MATERIAL LIST

QUANTITY	ITEM
40	Assortment Stakes to Build Circle
-	Binders Twine
1	Smoke Fly (Without holes)
1	Assortment to 1" sticks for bottom (Length depending on diameter of coracle)
-	Abundance of brush to form ring
2	Paddles or Poles for handling in water

PIONEERING PROJECTS - PATROL CAMP TABLE

MATERIAL LIST

Quantity	ITEM
4	12' Uprights (1 1/2" to 2" Diameter)
4	8' Seats (2" to 4" Diameter)
24+	6' Table Braces and Surface (1 1/2" to 3" Diameter)
16	8' Lengths ill line for lashing
1	12' Length 1/4" line for lashing
-	Binders Twine for lacing table surface

PIONEERING - PROJECT - MONKEY BRIDGE
Material LIST

QUANTITY	ITEM
4	12' shear Legs (4" Diameter)
2	5' Bottom Braces (3" Diameter)
6	4' stakes (3" Diameter)
1	60' Length 1" Rope for Foot Rope
2	60' Length 1/2 Line for Hand Ropes
6	18' Length 1/2 Line for Lashings
10	9' Length 1/4 line for Stringers
6	13' Lengths 1/4 Line for Anchorage
2	Burlap Bags for padding shear leg crotch
-	Binders Twine

PIONEERING PROJECTS - REVOLVING DERRICK BRIDGE
MATERIAL LIST

QUANTITY	ITEM
1	15' Spar for Upright (3" to 4" Diameter)
2	10' Spars (3" Diameter)
2	3' Spars (2 1/2" to 3" Diameter)
10	2' Spars (2"+ Diameter)
1	30' Length 1" line
1	15' Length 1" line
1	30' Length 1/2" to 1" line
5	15' Length 1/4" line
-	Binders Twine to lash Walk Pieces
4	Pickets
1	Single sheave Block
1	2' Length of 2" Strap

PIONEERING PROJECTS - OBSERVATION TOWER PROJECT
MATERIAL LIST

QUANTITY	ITEM
4	20' Spars for Uprights (4" Diameter)
4	8' Spars for Lower crosspieces (4" Diameter)
8	10' 6" Spars for Lower Diagonals (4" Diameter)
4	8' Spars for upper Diagonals (3" Diameter)
4	6' 6" Spars for Middle Crosspieces ((3" Diameter)
4	5' Spars for Upper Crosspieces (3" Diameter)
12	5' Platform Logs to (2" to 3" Diameter)
54	18' Lengths 1/2" line for lashing
-	Binders Twine for Lacing Platform

PIONEERING PROJECTS - PYRAMID TOWER

MATERIAL LIST

QUANTITY	ITEM	
3	16' Spars	(3" to 4" Diameter)
3	14' Spars	(3" to 4" Diameter)
3	12' Spars	(2 1/2 to 3" Diameter)
3	8' Spars	(2"+ Diameter)
3	6' Spars	(21/2" to 3" Diameter)
12	Staves from 2' to 6' long (1 1/2" to 2" Diameter)	
5	20' lengths 1/4" line for lashing	
15	15' lengths 1/4" line for lashing	
-	Binders twine for lacing platform	
1	Rope Ladder	