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## Construction Guidelines for Suspension Bridge

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Your suspension bridge will consist of the following:

1. Two suspension cables.
2. Suspended deck.
3. Two support towers.
4. Suspension hangers.
5. Support pulleys.

### Suspension Cables

1. Should be long enough to be anchored at tower base level at an angle of no more than  $45^\circ$  to the vertical.
2. Sag of cable, *i.e.* lowest level at the center, should be no more than 10% of the span.
3. Cables should not be tied to pulleys.
4. Use only the string provided.

### Suspended Deck

1. Construct with popsicles sticks using pins as sole connectors.
2. Should not be connected to end towers but may pass through.
3. Must be suspended by hangers from suspension cables.
4. Minimum 6" clearance between deck and lowest point of cable.

### Support Towers

1. Construct with popsicle sticks.
2. Must be adequately cross braided to prevent collapse.
3. Must be designed to support the pulley holder at the top.
4. Must be designed with adequate base for stability when standing freely.

### Suspension Hangers

1. Used for connecting deck to cable.
2. Must be uniformly distributed (equal intervals) along deck and securely tied to cable.

### Support Pulleys

1. Use two pulleys per tower.
2. Place on pulley holder (wooden dowel) and support at top of tower.

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## **Costing Information**

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Popsicle sticks	\$ 5.00 each
Cable	\$ 3.00 per inch
Hangers	\$ 1.00 per inch
Pulleys	\$10.00 each
Pulley Holders	\$ 5.00 per inch
Pins	\$ 0.20 each