

MATERIALS & EQUIPMENT LIST

Bridge Rescue Mission #01 Supply & Prep Checklist

KIT CHECK

STRUCTURAL LAB



MAKER SUPPLY READY: Most of these supplies are standard household items or common craft materials! Gather your materials ahead of time so your young builder can focus on planning, constructing, and testing.

EQUIPMENT ADVICE FROM THE TEAM

**Max "The Span"**

"Keep extra sticks on hand for structural gussets!"

**Professor Pivot**

"Have a scale ready to weigh test loads accurately."

**Coach Beacon**

"Organize materials into trays for easy building."

PRIMARY BUILDING SUPPLIES

ITEM DESCRIPTION	TARGET QUANTITY	TYPE	USAGE / PURPOSE
Popsicle Sticks / Craft Sticks	30–50 Sticks	REQUIRED	Primary structural members, trusses, and deck beams.
Craft Glue / Low-Temp Hot Glue	1 Bottle / Guns	REQUIRED	Joint bonding and frame assembly.
Corrugated Cardboard Sheets	2 Sheets (8x10")	REQUIRED	Bridge deck surface and abutment base supports.
Masking Tape or Painter's Tape	1 Roll	REQUIRED	Temporary hold during glue curing & rapid prototyping.
Drinking Straws / Paper Tubes	15–20 Pieces	OPTIONAL	Lightweight tension stays or diagonal bracing.
String / Heavy Yarn	3–5 Feet	OPTIONAL	Suspension cables and tension stays for cable bridges.
Rubber Bands	10–12 Bands	OPTIONAL	Flexible joint fasteners and truss tension dampeners.

LOAD TESTING & MEASUREMENT EQUIPMENT

EQUIPMENT	RECOMMENDED	TYPE	FUNCTION
Ruler or Tape Measure	12"+ Ruler	TESTING	Verifying the mandatory 12-inch gap span limit.
Testing Weights (Cans / Books / Washers)	5–10 lbs Total	TESTING	Incremental weight load placement during testing phase.
Small Bucket / Cup with String	1 Small Container	TESTING	Hangs from center bridge deck to hold load weights evenly.
Digital Kitchen Scale	1 Scale	OPTIONAL	Precision weight recording for Advanced & Elite tiers.

SMART SUBSTITUTIONS & SAFETY

Adapt your material kit with common household alternatives!

MAKER GUIDE

HOUSEHOLD SUBSTITUTION IDEAS

NO POPSICLE STICKS?

ALT

- Rolled newspaper tubes
- Plastic or paper straws
- Wooden skewers / Chopsticks
- Uncooked spaghetti bundles

NO HOT GLUE?

ALT

- Liquid PVA craft glue
- Duct tape or masking tape
- Clay or playdough joints
- Rubber band wrapping

TEST WEIGHT ALTS

ALT

- Standard soup cans (~1 lb ea)
- Bottled water (16 oz ≈ 1 lb)
- Coins (pennies/quarters) in cup
- Small textbooks or notebooks

SAFETY FIRST

GROWN-UP SUPERVISION RECOMMENDED: When using low-temperature hot glue guns, craft knives, or testing heavier load weights (5+ lbs), ensure an adult is supervising and assisting with cutting or handling heavy objects!

PRE-MISSION WORKSPACE PREPARATION

WORKSPACE SETUP

- ☐ Clear a flat table surface at least 3 feet wide.
- ☐ Set up two sturdy books or chairs exactly 12 inches apart to serve as canyon abutments.
- ☐ Lay down newspaper or a craft mat to catch glue drops.

BUILDER KIT ORGANIZER

- ☐ Sort building materials into separate piles or trays.
- ☐ Prepare scratch paper and pencils for initial planning sketches.
- ☐ Keep a scale or weight inventory logged and ready for testing.

TEST GAP SETTING REFERENCE

PROPER ABUTMENT & DIRECT LOAD TESTING SETUP

