Bridge Supply Convoy

HOST ONLY - preparation and story

Includes answers. Keep these pages and all hint pages with the adult host.

Welcome to the river bridge workshop. The convoy must collect rope before the crossing, avoid a closed lane and carry enough repair supplies. Your team has the original records on the table. First recover five pieces of information, then use the final plan to route the bridge repair convoy. Keep every result beside its badge so another teammate can check your reasoning.

1. Print the six player sheets and two record sheets for each team. Keep answers and hints with the host.

2. Lay out Travel map (one way), Supply cards, the remaining clue sheets and the final plan. All task records are printed inside the sheets; no extra prop is needed.

3. After each clue, pass roles one seat clockwise. With two players, combine Reader with Recorder and Checker with Builder. With five or six, add a second checker and a source finder; everyone explains one decision.

4 players; 1 team. Give each team 6 player sheets and 2 record sheets. Share one host guide and one set of three hint levels.

Paper and pencils are enough. Keep whole sheets at one table; nothing needs cutting, folding or hiding.

Optional: 4 invitations or certificates, only if selected.

Bridge Supply Convoy

HOST ONLY - solution guide

1. Path: S-R-T-F

Visit R and T without using a closed edge. Eligible journeys within 10 units: S-R-T-F costs 7; S-R-X-T-F costs 9. The least-cost result is S-R-T-F.

2. Kit: A-B

Compare coverage before weight. Only complete kits qualify; minimize their combined weight and report the selected cards in alphabetical order. Result: A-B.

3. Record: KITE

Check source status first, then join the matching tag and bay. The useful information comes from separate records, not their printed row order. Result: KITE.

4. Window: MID

Add job time and travel time to each printed start. Compare the sum with both that window's end and the deadline, then reject early starts. Result: MID.

5. Food: WALK

Start with listed stock. Follow the printed dependencies until no new component becomes available; a circular dependency cannot create its first input. Result: WALK.

6. Final: B-C-F-G-K

Recover all five loads. The cheaper road works for a small load; a large load needs the higher-capacity road. The resulting five-leg route records every necessary decision. Checked result: B-C-F-G-K.

Bridge Supply Convoy

HOST ONLY - timeline, story and ending

3 minutes: Read the opening. Show the evidence record and choose starting roles.

5 minutes: Solve Path. Offer one hint at a time and rotate roles after checking.

5 minutes: Solve Kit. Offer one hint at a time and rotate roles after checking.

5 minutes: Solve Record. Offer one hint at a time and rotate roles after checking.

5 minutes: Solve Window. Offer one hint at a time and rotate roles after checking.

5 minutes: Solve Food. Offer one hint at a time and rotate roles after checking.

7 minutes: Build the five-leg delivery route using all five results.

3 minutes: Read the ending. Ask each teammate to explain one rejected alternative.

After Kit: A cheap road can still fail a load limit or miss a required stop. Keep cost and capacity as separate checks. Pass the record sheet to a new checker before opening the next clue.

After Window: Four results are recorded. Each teammate points to a source supporting one result. Complete the fifth check before building the five-leg delivery route.

Check every result using the solution guide. Offer the next hint only when requested; save the answer reveal until the group is ready.

The delivery follows route B-C-F-G-K; every road can carry its assigned load. Thank each teammate for a different piece of reasoning.

Explain one tempting wrong choice and the evidence that ruled it out. Show how each of the five results affected the five-leg delivery route. If a clue is missing, say what remains uncertain before reopening that sheet.

Duration and ages are estimates. Adjust the pace and offer help for your group.

Bridge Supply Convoy

Player clue 1: Path | Team 1

The convoy must collect rope before the crossing, avoid a closed lane and carry enough repair supplies. We will use the records on the table to route the bridge repair convoy. Share the reading, explain each choice and keep the five results for the final plan.

Trace a legal supply journey from S to F. The map's arrows are one-way roads. Visit every required stop, stay inside the travel budget and use the cheapest complete journey. Report all stop letters.

Travel map (one way)
S=Depot; R=Rope shed; T=Tool store; X=Old bridge; F=Repair bank
S > R: 2 units
S > X: 1 units
R > T: 2 units
T > F: 3 units
X > F: 1 units CLOSED
R > F: 2 units
X > T: 2 units
R > X: 2 units
T > X: 1 units
Journey rules
Start S; finish F; limit 10 units.
Visit R, T. Use the least total cost.
Write every stop in order, with hyphens.

Path result: _____

Bridge Supply Convoy

Player clue 2: Kit | Team 1

Pack a kit that supplies all three needs. One card may cover two needs, but its weight is counted once. Choose the lightest complete kit within the carrier limit. Report its card letters alphabetically.

Supply cards

A: weight 2; gives tie

B: weight 3; gives light+mark

C: weight 4; gives tie+light

D: weight 2; gives mark

E: weight 6; gives tie+light+mark

Packing order

Capacity 7; must cover tie, light, mark.

Use the lightest complete kit. Each card once.

Write chosen card IDs alphabetically, with hyphens.

Kit result: _____

Bridge Supply Convoy

Player clue 3: Record | Team 1

Use the tool requests and depot log to follow the completed record. Match printed keys, then report the requested field. A planned or cancelled entry cannot prove a move.

Tool requests
item: Rope | tag: PINE | status: cancelled
item: Plank | tag: WAVE | status: draft
item: Lamp | tag: STAR | status: checked
Depot log
tag: STAR | bay: NORTH
tag: PINE | bay: EAST
tag: WAVE | bay: WEST
Bridge note
bay: WEST | seal: RING
bay: NORTH | seal: KITE
bay: EAST | seal: LEAF
Cross-check
Match A.tag to B.tag.
Match B.bay to C.bay.
A.status is checked.
Report C.seal.

Record result: _____

Bridge Supply Convoy

Player clue 4: Window | Team 1

The team needs time for both the job and the journey. It cannot start before the earliest time, leave a window unfinished, or arrive after the deadline. Which departure window works? Times are minutes after opening.

Departure windows (minutes after opening)

EARLY: start 5; window ends 20

MID: start 15; window ends 30

LATE: start 25; window ends 45

Work and travel

Earliest start 10; job 7 min.

Travel 5 min; arrival deadline 30.

Job + travel must both fit inside one window.

Report the only possible window ID.

Window result: _____

Bridge Supply Convoy

Player clue 5: Food | Team 1

Start with supplies actually in stock. A component becomes available only when its printed dependency is met. AND means both components are needed. Which proposed repair can be completed without waiting for another delivery?

Workshop dependency cards

DECK needs WOOD

RAIL needs ROPE

WALK needs DECK AND RAIL

HOIST needs GEAR AND ROPE

GEAR needs HOIST

Starting conditions

Available now: ROPE, WOOD.

A result becomes available when its needs are met.

Which of WALK, HOIST, GEAR becomes available?

Food result: _____

Bridge Supply Convoy

Player clue 6: Final | Team 1

Use each result to recover the load for its leg. At each leg choose the cheapest road that can carry that load. A road with too little capacity is closed to this cargo. Report the five road IDs in journey order.

Use your results from: Path, Kit, Record, Window, Food.

Cargo key, one leg at a time
Leg 1 (Path): S-R-F=2; S-R-T-F=4
Leg 2 (Kit): A-B=2; B-C=4
Leg 3 (Record): RING=2; KITE=4
Leg 4 (Window): MID=2; EARLY=4
Leg 5 (Food): HOIST=2; WALK=4
Roads: load capacity / travel cost
1: B 6/4 | A 3/2
2: C 3/2 | D 6/4
3: F 6/4 | E 3/2
4: G 3/2 | H 6/4
5: K 6/4 | J 3/2
Route rule
Choose the cheapest road carrying each load.
Report the five road IDs in leg order, with hyphens.

Final result: _____

Ask your host to check your final result and read the ending.

Bridge Supply Convoy

Hint level 1 - HOST ONLY

1. Path

Find S, F, required stops R, T and any CLOSED edge.

2. Kit

Read each supply card and the three required needs.

3. Record

Start with the status field in Tool requests.

4. Window

Look at earliest start, each window end and the arrival deadline.

5. Food

Find the stock line and the readiness cards.

6. Final

Keep the five named results beside the final plan and find the key for each badge.

Bridge Supply Convoy

Hint level 2 - HOST ONLY

1. Path

First remove paths using closed roads or missing a required stop. More than one complete journey may remain.

2. Kit

A light card alone may leave a need uncovered; a shared supply counts for both needs.

3. Record

The tag links an item to a bay; rows in separate records need not line up.

4. Window

The journey uses time as well as the job; add both to the start of each window.

5. Food

AND needs every input; OR needs one. A future delivery is not current stock.

6. Final

Each badge controls a different fact, road leg, order note, pulse or habitat layer. Use the matching key exactly once.

Bridge Supply Convoy

Hint level 3 - HOST ONLY

1. Path

Add the cost of every edge in each remaining journey. Compare the totals with the budget, then choose the cheapest eligible journey.

2. Kit

Compare complete combinations, adding each chosen card weight once. Reject any combination over the limit before choosing the lightest.

3. Record

Keep only entries meeting every status test. Follow each printed join to the report field; do not guess from row position.

4. Window

Check all three conditions for each window. A slot can be long enough yet start too early or arrive too late.

5. Food

Mark supported components in rounds. Stop when no further component can be marked and compare the proposed results.

6. Final

Check the completed product against all five recovered facts. If two answers remain, locate the fact that distinguishes them rather than guessing.

Bridge Supply Convoy

Team 1 result record

Write the complete result from each clue. Results can be words, routes, orders, settings or numbers.

Path: _____

Kit: _____

Record: _____

Window: _____

Food: _____

Keep this record beside the final clue. Copy results exactly, including any leading zero.

Reader / Recorder / Evidence checker / Route or model builder

After each clue, pass roles one seat clockwise. With two players, combine Reader with Recorder and Checker with Builder. With five or six, add a second checker and a source finder; everyone explains one decision.

Bridge Supply Convoy

Team 1 final result and celebration

Our final challenge: Final

We combined our earlier clues to decide:

_____

_____

We know it works because:

_____

_____

Host: compare the result with your solution guide. Read the ending when it matches, then let the team explain one discovery.

No physical lock or prize is required. Draw a celebration star here if you like.

Bridge Supply Convoy

You're invited to a mystery!

Join Birthday Explorer for Bridge Supply Convoy.

The convoy must collect rope before the crossing, avoid a closed lane and carry enough repair supplies. Work together to route the bridge repair convoy.

Date: _____

Time: _____

Place: _____

Bring your curiosity. Paper and pencils are provided. Share ideas and solve six clues together.

Designed for ages 8-10. Estimated 35-50 minutes.

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Bridge Supply Convoy

Mystery Explorer

Presented to Birthday Explorer

Team member: _____

For completing Bridge Supply Convoy with curiosity, teamwork and kindness.

The delivery follows route B-C-F-G-K; every road can carry its assigned load. Thank each teammate for a different piece of reasoning.

Date: _____

Host signature: _____

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