Garden Beacon Repair

HOST ONLY - preparation and story

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

Welcome to the garden beacon hut. A repaired beacon begins at recorded dial states; every recovered pulse must be applied, including zero turns. Your team has the original records on the table. First recover five pieces of information, then use the final plan to configure the garden beacon. 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 Unlabelled legend, Beacon tests, 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.

Garden Beacon Repair

HOST ONLY - solution guide

1. Signal: REST-OPEN

A consistent one-to-one mapping satisfies every training example. Use the complete mapping to read the two-signal message in order. Result: REST-OPEN.

2. Record: EAST

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

3. Order: C

The before relationships connect all four events. Place linked cards, check any immediate handoff and then read the specified position. Result: C.

4. Path: S-A-C-D-F

Discard closed roads and paths missing A or D. Add the costs of every remaining edge; the lowest eligible total determines the whole route. Result: S-A-C-D-F.

5. Habitat: GATE

Compare all printed features with every positive and negative requirement. Reject each near match using the particular requirement it fails. Result: GATE.

6. Final: A1-B0-C2-D1-E1

Select one pulse card for each of the five badge results. Add the turns by dial column to the printed starting states and wrap each total around 0, 1, 2. The checked configuration is A1-B0-C2-D1-E1; each pulse pair has equal size and total turns, so its shape does not identify the correct choice.

Garden Beacon Repair

HOST ONLY - timeline, story and ending

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

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

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

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

7 minutes: Build the checked five-dial configuration using all five results.

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

After Record: Several recovered pulses may affect the same dial. Keep the legend and the starting positions visible. Pass the record sheet to a new checker before opening the next clue.

After Path: Four results are recorded. Each teammate points to a source supporting one result. Complete the fifth check before building the checked five-dial configuration.

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

The panel is ready at A1-B0-C2-D1-E1; every recorded pulse has been applied. 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 checked five-dial configuration. 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.

Garden Beacon Repair

Player clue 1: Signal | Team 1

A repaired beacon begins at recorded dial states; every recovered pulse must be applied, including zero turns. We will use the records on the table to configure the garden beacon. Share the reading, explain each choice and keep the five results for the final plan.

Each signal means one different word. Use the training examples to recover the legend. Words marked "any order" may be swapped; compare shared signals across cards. Decode the received message from left to right. The desk uses this message when handling the paper garden beacon.

Unlabelled legend

Signals: DOT, BAR, ARC, RING. Words: CHECK, OPEN, REST, HOLD.

Each signal has one word; each word is used once.

Training messages

DOT+BAR+ARC means REST+OPEN+CHECK (any order)

DOT+RING means HOLD+CHECK (any order)

BAR+RING means OPEN+HOLD (any order)

Received message

ARC > BAR

Report decoded words in order, with hyphens.

Signal result: _____

Garden Beacon Repair

Player clue 2: Record | Team 1

Use the beacon tests and lamp book to follow the completed record. Match printed keys, then report the requested field. A planned or cancelled entry cannot prove a move.

Beacon tests

item: Leaf | tag: PINE | status: checked

item: Lamp | tag: WAVE | status: cancelled

item: Post | tag: STAR | status: draft

Lamp book

tag: STAR | bay: NORTH

tag: PINE | bay: EAST

tag: WAVE | bay: WEST

Cross-check

Match A.tag to B.tag.

A.status is checked.

Report B.bay.

Record result: _____

Garden Beacon Repair

Player clue 3: Order | Team 1

Arrange the four event cards using every witness note. "Immediately before" means there is no event between them. Report the requested position after the whole order has been checked.

Event cards

A: Read tag

B: Test pulse

C: Check lamp

D: Clean lens

Witness notes

D is immediately before B.

A is before D.

C is immediately before A.

Report the event ID in position 1.

Order result: _____

Garden Beacon Repair

Player clue 4: Path | Team 1

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=Start; A=Leaf; B=Lamp; C=Post; F=Delivery
S > A: 2 units
S > B: 1 units
A > C: 2 units
B > C: 2 units CLOSED
C > F: 2 units
B > F: 2 units
A > F: 7 units
C > D: 1 units
D > F: 2 units
Journey rules
Start S; finish F; limit 8 units.
Visit A, D. Use the least total cost.
Write every stop in order, with hyphens.

Path result: _____

Garden Beacon Repair

Player clue 5: Habitat | Team 1

Compare the post survey with the beacon requirements. Choose the site with suitable shade and ground conditions; use the printed survey rather than assuming a place name tells you the answer.

Garden-beacon post cards

OAK: shade=deep; ground=dry; entry=wide

POND: shade=light; ground=damp; entry=wide

HEDGE: shade=deep; ground=dry; entry=narrow

GATE: shade=light; ground=dry; entry=wide

Required features

shade must not be deep.

ground must be dry.

Report the one matching card ID.

Habitat result: _____

Garden Beacon Repair

Player clue 6: Final | Team 1

Use the five results to select five pulse cards. Start at the recorded dial states. Add all selected turns for each dial and follow its loop: 0, 1, 2, then 0 again. Report the final state of dials A through E.

Use your results from: Signal, Record, Order, Path, Habitat.

Control panel

Dial order: A, B, C, D, E. States: 0 > 1 > 2 (loop).

Start: A2 / B0 / C1 / D2 / E0.

Pulse cards (turns in dial order)

Signal: CHECK-OPEN=(1,2,0,0,0); REST-OPEN=(2,1,0,0,0)

Record: EAST=(0,2,0,1,0); NORTH=(0,1,0,2,0)

Order: A=(0,0,2,1,0); C=(0,0,1,2,0)

Path: S-A-C-D-F=(1,0,0,2,0); S-A-C-F=(2,0,0,1,0)

Habitat: OAK=(1,0,0,0,2); GATE=(2,0,0,0,1)

Setting rule

Add every chosen pulse. Move around each dial loop.

Report dial ID + state, in order, with hyphens.

Final result: _____

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

Garden Beacon Repair

Hint level 1 - HOST ONLY

1. Signal

Look at the training cards that share one signal.

2. Record

Start with the status field in Beacon tests.

3. Order

Read the event letters and all three witness notes.

4. Path

Find S, F, the required-stop list and any CLOSED edge.

5. Habitat

Read the garden-beacon post cards and the requirements.

6. Final

Find the starting states, dial order and pulse-card key.

Garden Beacon Repair

Hint level 2 - HOST ONLY

1. Signal

In an unordered pair, a word cannot be assigned by its left/right position. Use the overlap with another pair.

2. Record

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

3. Order

Join immediately-before pairs as a block; other before notes set the direction between blocks.

4. Path

A cheap shortcut is not a complete journey if it skips a required stop.

5. Habitat

Compare the same named feature across cards; check negative requirements as carefully as positive ones.

6. Final

Each selected vector lists turns for every dial. Several different cards can affect the same dial.

Garden Beacon Repair

Hint level 3 - HOST ONLY

1. Signal

Give each signal a different word, check every training example and only then decode the received message in its printed order.

2. Record

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

3. Order

Try the remaining positions, then check every note against your full order before reading the requested position.

4. Path

List the legal complete paths, add their edge costs and compare only paths that meet every condition.

5. Habitat

Keep a card only if it passes every requirement. Point to the failing feature before crossing out each alternative.

6. Final

Add one dial column at a time to its starting state, wrap around the three-state loop, then check that all five pulse cards were used.

Garden Beacon Repair

Team 1 result record

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

Signal: _____

Record: _____

Order: _____

Path: _____

Habitat: _____

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.

Garden Beacon Repair

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.

Garden Beacon Repair

You're invited to a mystery!

Join Birthday Explorer for Garden Beacon Repair.

A repaired beacon begins at recorded dial states; every recovered pulse must be applied, including zero turns. Work together to configure the garden beacon.

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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Garden Beacon Repair

Mystery Explorer

Presented to Birthday Explorer

Team member: _____

For completing Garden Beacon Repair with curiosity, teamwork and kindness.

The panel is ready at A1-B0-C2-D1-E1; every recorded pulse has been applied. Thank each teammate for a different piece of reasoning.

Date: _____

Host signature: _____

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