Clockmaker Birthday Repair

HOST ONLY - preparation and story

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

Welcome to the clockmaker workshop. The clock repair cards must be returned to an order that allows every check to happen. Your team has the original records on the table. First recover five pieces of information, then use the final plan to reconstruct the clock repair schedule. 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 Event cards, Departure windows (minutes after opening), 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.

Clockmaker Birthday Repair

HOST ONLY - solution guide

1. Order: D

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

2. 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.

3. Parts: 6

Known stock: 10 + 3 - 3 = 10. Closing stock 16 minus 10 gives the missing return 6. Cancelled +7 never arrived. Result: 6.

4. Repairer: 2

Tess has Gear; Raj has Hand; Kit has Spring. Kit's item gives 2. Result: 2.

5. Face: 3

Different positions are 2, 5, 8. There are 3 differences. Result: 3.

6. Final: C-A-E-B-F-D

The five recovered order notes link all six events. Arrange them into one continuous order. Removing any link leaves two neighboring sections without a known order. Checked result: C-A-E-B-F-D.

Clockmaker Birthday Repair

HOST ONLY - timeline, story and ending

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

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

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

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

7 minutes: Build the six-event run sheet using all five results.

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

After Window: One time window can fit the work but fail the journey. Keep each order note beside its source. Pass the record sheet to a new checker before opening the next clue.

After Repairer: Four results are recorded. Each teammate points to a source supporting one result. Complete the fifth check before building the six-event run sheet.

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

The crew uses run sheet C-A-E-B-F-D; every recovered order note is respected. 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 six-event run sheet. 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.

Clockmaker Birthday Repair

Player clue 1: Order | Team 1

The clock repair cards must be returned to an order that allows every check to happen. We will use the records on the table to reconstruct the clock repair schedule. Share the reading, explain each choice and keep the five results for the final plan.

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: Open case

B: Fit spring

C: Stop clock

D: Clean wheel

Witness notes

D is immediately before B.

A is before D.

C is immediately before A.

Report the event ID in position 3.

Order result: _____

Clockmaker Birthday Repair

Player clue 2: 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 15; window ends 30

MID: start 25; window ends 40

LATE: start 35; window ends 55

Work and travel

Earliest start 20; job 7 min.

Travel 5 min; arrival deadline 40.

Job + travel must both fit inside one window.

Report the only possible window ID.

Window result: _____

Clockmaker Birthday Repair

Player clue 3: Parts | Team 1

Parts desk: A return entry lost its amount. Use the opening and closing stock to find the missing return. Apply DONE entries; ignore the CANCELLED plan.

Opening stock: 10. Closing stock: 16.

Received: +3 DONE
Planned: +7 CANCELLED
Issued: -3 DONE
Returned: ? DONE

Missing return = ? units. Ignore cancelled plans.

Parts result: _____

Clockmaker Birthday Repair

Player clue 4: Repairer | Team 1

Repairer desk: Each person has ONE different item. Use all four NOT rules. Find Kit's item and copy its digit.

Gear digit 9	**Spring** digit 2	**Hand** digit 5

People: Tess, Raj, Kit

Tess does NOT have Hand.

Raj does NOT have Gear.

Raj does NOT have Spring.

Kit does NOT have Gear.

Find Kit's item. Each item is used once.

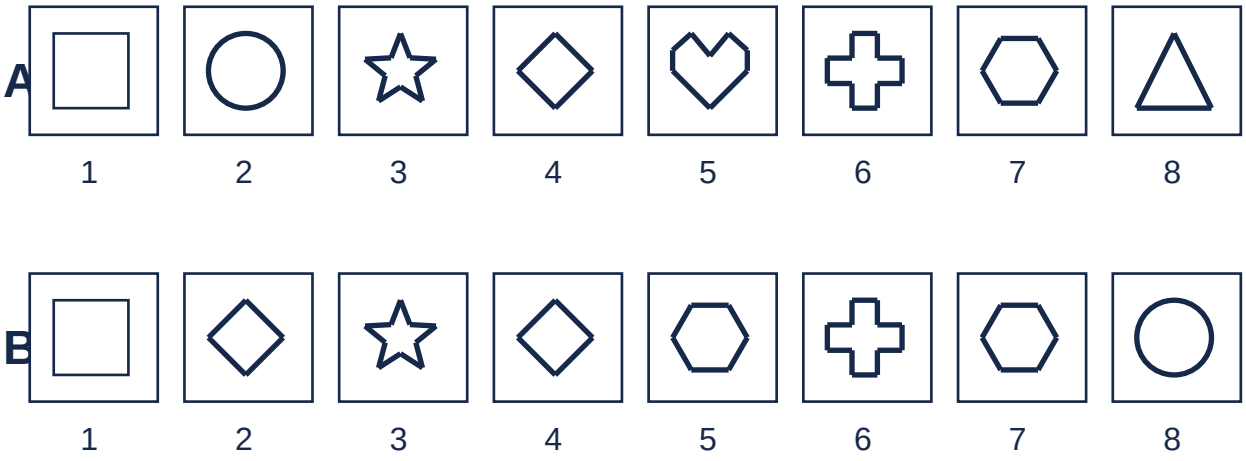
Repairer result: _____

Clockmaker Birthday Repair

Player clue 5: Face | Team 1

Face desk: Compare the two records at matching numbered positions. Count different pairs once each; ignore box outlines.

Compare matching numbered positions.



Do not count title, labels, or boxes as differences.

Face result: _____

Clockmaker Birthday Repair

Player clue 6: Final | Team 1

Each recorded result recovers one order note. Use all five notes to put the six named events in order. A>B means A happens before B. Write all six event IDs from first to last; check that every note is satisfied.

Use your results from: Order, Window, Parts, Repairer, Face.

Run sheet
A: Open case
B: Fit spring
C: Stop clock
D: Test chime
E: Clean wheel
F: Close case
Recovered order notes
Order: A=A>C; D=C>A
Window: MID=A>E; EARLY=E>A
Parts: 13=B>E; 6=E>B
Repairer: 2=B>F; 9=F>B
Face: 0=D>F; 3=F>D
Order rule
A>B means A happens before B. Use all five notes.
Report all six event IDs in order, with hyphens.

Final result: _____

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

Clockmaker Birthday Repair

Hint level 1 - HOST ONLY

1. Order

Read the event letters and all three witness notes.

2. Window

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

3. Parts

Find opening stock, closing stock and the DONE or CANCELLED marks.

4. Repairer

Find the three people, the three items and the forbidden pairings.

5. Face

Compare the same numbered position in the two strips.

6. Final

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

Clockmaker Birthday Repair

Hint level 2 - HOST ONLY

1. Order

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

2. Window

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

3. Parts

Only completed entries change stock. A cancelled plan cannot be added or subtracted.

4. Repairer

Each item is used once. A person ruled out of two items must have the third.

5. Face

A difference belongs to a pair of positions and is counted once, even when both shapes differ.

6. Final

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

Clockmaker Birthday Repair

Hint level 3 - HOST ONLY

1. Order

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

2. Window

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

3. Parts

Apply every known completed change to opening stock. Compare that result with closing stock to recover the missing completed return.

4. Repairer

Place the most restricted person, remove that item from the others, then use the remaining rule. Read the target person only after checking all pairs.

5. Face

Mark every changed pair, check the unmarked pairs, then count your marks. Ignore titles and box outlines.

6. Final

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

Clockmaker Birthday Repair

Team 1 result record

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

Order: _____

Window: _____

Parts: _____

Repairer: _____

Face: _____

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.

Clockmaker Birthday 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.

Clockmaker Birthday Repair

You're invited to a mystery!

Join Birthday Explorer for Clockmaker Birthday Repair.

The clock repair cards must be returned to an order that allows every check to happen. Work together to reconstruct the clock repair schedule.

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.

Clockmaker Birthday Repair

You're invited to a mystery!

Join Birthday Explorer for Clockmaker Birthday Repair.

The clock repair cards must be returned to an order that allows every check to happen. Work together to reconstruct the clock repair schedule.

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.

Clockmaker Birthday Repair

You're invited to a mystery!

Join Birthday Explorer for Clockmaker Birthday Repair.

The clock repair cards must be returned to an order that allows every check to happen. Work together to reconstruct the clock repair schedule.

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.

Clockmaker Birthday Repair

You're invited to a mystery!

Join Birthday Explorer for Clockmaker Birthday Repair.

The clock repair cards must be returned to an order that allows every check to happen. Work together to reconstruct the clock repair schedule.

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.

Clockmaker Birthday Repair

Mystery Explorer

Presented to Birthday Explorer

Team member: _____

For completing Clockmaker Birthday Repair with curiosity, teamwork and kindness.

The crew uses run sheet C-A-E-B-F-D; every recovered order note is respected. Thank each teammate for a different piece of reasoning.

Date: _____

Host signature: _____

Clockmaker Birthday Repair

Mystery Explorer

Presented to Birthday Explorer

Team member: _____

For completing Clockmaker Birthday Repair with curiosity, teamwork and kindness.

The crew uses run sheet C-A-E-B-F-D; every recovered order note is respected. Thank each teammate for a different piece of reasoning.

Date: _____

Host signature: _____

Clockmaker Birthday Repair

Mystery Explorer

Presented to Birthday Explorer

Team member: _____

For completing Clockmaker Birthday Repair with curiosity, teamwork and kindness.

The crew uses run sheet C-A-E-B-F-D; every recovered order note is respected. Thank each teammate for a different piece of reasoning.

Date: _____

Host signature: _____

Clockmaker Birthday Repair

Mystery Explorer

Presented to Birthday Explorer

Team member: _____

For completing Clockmaker Birthday Repair with curiosity, teamwork and kindness.

The crew uses run sheet C-A-E-B-F-D; every recovered order note is respected. Thank each teammate for a different piece of reasoning.

Date: _____

Host signature: _____