

Cupcake Constellation

HOST ONLY - preparation and story

Includes answers. Keep these pages with an adult.

The space kitchen has lost the constellation layout code. Decode the star label, match the tray keepers and check the supply record before reading the star slots. Collect five named badge digits and use the final sheet. Every clue is on the table; ask the host for one hint at a time.

1. Print one player pack and two record sheets per team. Keep the host answers and all three hint levels with the adult.
2. Keep every clue as a full sheet at one table. Put the final sheet face down until all five results are recorded. Nothing needs cutting, folding or hiding.
3. Give each child a pencil. Choose a reader, recorder and checker, and swap jobs after each clue. Use one team for 2-4 children or two teams for 5-6.

Players: 4; teams: 1. Print one player and prop set per team. Invitations and certificates: 4 each.

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

Cupcake Constellation

HOST ONLY - solution guide

1. Stars: 3

The decoded word is STAR; its row gives 3.

2. Keeper: 6

Luna has Tray; Neve has Tag; Pax has Chart. Luna's item gives 6.

3. Stock: 9

Known stock: $8 + 2 - 3 = 7$. Closing stock 16 minus 7 gives the missing return 9. Cancelled +7 never arrived.

4. Orbit: 3

A3, B1, C2, D3 reads STAR. The conversion table gives 3.

5. Tray: 6

Remove 1 from 25; share 24 among 4 parcels to get 6. Check $2 \times 6 + 3 = 15$.

6. Final: 96336

C3 > E3 > A3 > D3 > B3

Cupcake Constellation

HOST ONLY - timeline and paper check

3 minutes: Read the story, show the badge record and choose roles.

4 minutes: Solve Stars. Offer one hint level at a time if wanted.

6 minutes: Solve Keeper. Offer one hint level at a time if wanted.

5 minutes: Solve Stock. Offer one hint level at a time if wanted.

5 minutes: Solve Orbit. Offer one hint level at a time if wanted.

5 minutes: Solve Tray. Offer one hint level at a time if wanted.

5 minutes: Use the five results on the final sheet.

2 minutes: Read the ending and thank each teammate.

Paper completion: check each badge against the solution guide, then check the final code. No device is required.

The restored layout code completes the paper cupcake constellation. Thank your team for checking the evidence together. Confirmed final control code: 96336.

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

Cupcake Constellation

Player clue 1: Stars | Team 1

The space kitchen has lost the constellation layout code. Decode the star label, match the tray keepers and check the supply record before reading the star slots. Find five badge digits, then use the final sheet. Help each other and ask for hints.

Stars desk: Decode all shapes in message order. Repeated shapes repeat their letter. Convert the full word using the table.



diamond = S



heart = T



cross = A



hexagon = R



diamond



heart



cross



hexagon

STAR = 3

BEAM = 6

DOCK = 9

Stars badge: _____

Cupcake Constellation

Player clue 2: Keeper | Team 1

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

Tray

digit 6

Chart

digit 9

Tag

digit 2

People: Luna, Neve, Pax

Luna does NOT have Tag.

Neve does NOT have Tray.

Neve does NOT have Chart.

Pax does NOT have Tray.

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

Keeper badge: _____

Cupcake Constellation

Player clue 3: Stock | Team 1

Stock 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: 8. Closing stock: 16.

Received: +2 DONE

Planned: +7 CANCELLED

Issued: -3 DONE

Returned: ? DONE

Missing return = ? units. Ignore cancelled plans.

Stock badge: _____

Cupcake Constellation

Player clue 4: Orbit | Team 1

Orbit desk: Read the letter at each coordinate, in order. Letter = column; number = row. Convert the complete word using the printed table.

Columns: A, B, C, D. Rows: 1, 2, 3.

1	W	T	C	F
2	B	E	A	L
3	S	K	N	R

STAR = 3

BEAM = 6

DOCK = 9

READ COORDINATES IN ORDER:

A3 > B1 > C2 > D3

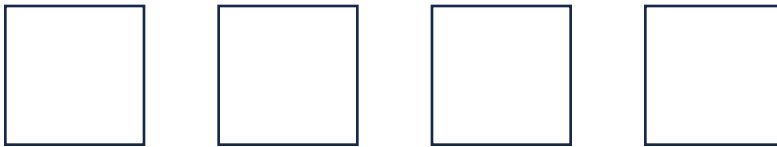
Orbit badge: _____

Cupcake Constellation

Player clue 5: Tray | Team 1

Tray desk: Every parcel has the same whole-number weight. Remove loose units, find ONE parcel and check the second rule.

4 parcels + 1 loose units = 25 units



2 parcels + 3 loose units = 15 units

One parcel = ? units. Whole numbers 1-9.

All parcels have equal weight.

Tray badge: _____

Cupcake Constellation

Player clue 6: Final | Team 1

Copy each badge digit into its named slot. Read the slots in the printed order; join all five digits.

A3: Stars ?	B3: Keeper ?	C3: Stock ?
D3: Orbit ?	E3: Tray ?	

READ SLOTS IN THIS ORDER:

C3 > E3 > A3 > D3 > B3

Final badge: _____

Need help? Ask your host for one hint at a time.

Cupcake Constellation

Hint cards - level 1 (spoilers; keep with host)

1. Stars

Use the letter under each named shape.

2. Keeper

No item can belong to two people. Cross out each forbidden pairing.

3. Stock

The missing amount is a return into stock. The cancelled delivery never happened.

4. Orbit

Columns A-D run left to right. Rows 1-3 run top to bottom.

5. Tray

Loose units are not parcels. Every parcel has equal weight.

6. Final

Keep all five named badge results beside this sheet.

Cupcake Constellation

Hint cards - level 2 (spoilers; keep with host)

1. Stars

The first two shapes give S then T. Decode the remaining shapes the same way.

2. Keeper

Neve cannot have two items, so Neve must have Tag.

3. Stock

Start with 8. Apply +2 then -3. Ignore the cancelled +7.

4. Orbit

The first coordinate A3 means column A, row 3. Its letter is S.

5. Tray

Remove 1 loose units from 25. That leaves 24 for the equal parcels.

6. Final

C3 is read first; it holds Stock.

Cupcake Constellation

Hint cards - level 3 (spoilers; keep with host)

1. Stars

Write ST first, then one letter per remaining shape. Choose the table row matching the whole message.

2. Keeper

Cross Tag off for the other two people. Apply the last NOT rule, then find Luna's item.

3. Stock

The known entries leave 7. How much must return to reach the closing stock of 16?

4. Orbit

Begin with S, then read B1, C2, D3 in order. Use the complete word's conversion row.

5. Tray

Share 24 equally among 4 parcels. Substitute one parcel's weight into the second rule.

6. Final

Read slots C3, E3, A3, D3, B3. Copy every stored digit in that order, including zero.

Cupcake Constellation

Team 1 badge record (no cutting needed)

Write a digit beside each badge as you solve its clue.

Stars: _____

Keeper: _____

Stock: _____

Orbit: _____

Tray: _____

Reader: reads the clue. Recorder: writes the digit. Path finder: traces routes. Swap roles every clue.

Cupcake Constellation

Team 1 paper unlock card

Our five badges are ready. We used the final sheet to find this code:

Host: compare this with your solution guide. When it matches, read the ending and celebrate.

No physical lock or prize is required. You may draw a celebration star on this card.

Cupcake Constellation

You're invited to a birthday mystery!

Join Birthday Explorer for Cupcake Constellation.

Recover the control code for the paper cupcake constellation.

Date: _____

Time: _____

Place: _____

Bring your curiosity. Paper and pencils are provided. Work together, share ideas and solve six clues.

Designed for ages 8-10. Estimated 30-45 minutes.

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Cupcake Constellation

Birthday Mystery Explorer

Presented to Birthday Explorer

Team member: _____

For completing Cupcake Constellation with curiosity,
teamwork and kindness.

The restored layout code completes the paper cupcake constellation.
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control code: 96336.

Date: _____

Host signature: _____

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