Desert Shade Shelter

HOST ONLY - preparation and story

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

Welcome to the fictional dune camp. Shade, dryness and access are separate requirements; a nearly suitable card may fail just one. Your team has the original records on the table. First recover five pieces of information, then use the final plan to design the dune-creature shelter. 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 Dune-shelter field cards, 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.

Desert Shade Shelter

HOST ONLY - solution guide

1. Habitat: LEDGE

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

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. Window: M

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: M.

4. Record: COOL

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

5. Food: GLIM

Propagate food availability from the printed starting food. The OR visitor has a supported food chain; the AND visitor lacks one food and the circular pair never gets started. Result: GLIM.

6. Final: R2-F1-W2-D1-E2

Each recovered field result sets one separate habitat requirement. Match all five layers; a complete plan must include suitable cover, ground, water, food and access. Checked result: R2-F1-W2-D1-E2.

Desert Shade Shelter

HOST ONLY - timeline, story and ending

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

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

7 minutes: Build the five-part habitat design using all five results.

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

After Kit: A suitable roof does not guarantee suitable food or water. Keep each habitat need beside its field evidence. Pass the record sheet to a new checker before opening the next clue.

After Record: Four results are recorded. Each teammate points to a source supporting one result. Complete the fifth check before building the five-part habitat design.

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

The paper model uses parts R2-F1-W2-D1-E2, with every habitat layer matched to its evidence. 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-part habitat design. 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.

Desert Shade Shelter

Player clue 1: Habitat | Team 1

Shade, dryness and access are separate requirements; a nearly suitable card may fail just one. We will use the records on the table to design the dune-creature shelter. Share the reading, explain each choice and keep the five results for the final plan.

These are fictional field cards for a paper model. Compare all the recorded conditions with the habitat requirements. A card that passes only one rule is not enough. Report the one card that meets every rule.

Dune-shelter field cards

ARCH: roof=shade; floor=dry; entry=narrow

RIDGE: roof=sun; floor=dry; entry=wide

HOLLOW: roof=shade; floor=damp; entry=wide

LEDGE: roof=shade; floor=dry; entry=wide

Required features

roof must be shade.

floor must not be damp.

entry must be wide.

Report the one matching card ID.

Habitat result: _____

Desert Shade Shelter

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 4; gives shade+floor

B: weight 2; gives water

C: weight 2; gives shade

D: weight 5; gives water+floor

E: weight 8; gives shade+water+floor

Packing order

Capacity 8; must cover shade, water, floor.

Use the lightest complete kit. Each card once.

Write chosen card IDs alphabetically, with hyphens.

Kit result: _____

Desert Shade Shelter

Player clue 3: Window | Team 1

Put the three survey jobs into the order described by the notes. An immediate handoff leaves no job between those cards. Report the job in the requested position.

Event cards

R: Read shade card

S: Sketch shelter

M: Mark shade edge

Witness notes

R is immediately before M.

M is before S.

Report the event ID in position 2.

Window result: _____

Desert Shade Shelter

Player clue 4: Record | Team 1

The same shelter tag appears on a completed survey and a planned visit. Use status first, then join the visit period to the condition record. Report the condition of the completed survey.

Dune survey visits
tag: K | period: DAWN | status: checked
tag: K | period: NOON | status: draft
tag: L | period: DAWN | status: cancelled
Tagged shelter cards
tag: K | roof: ARCH
tag: L | roof: FLAT
Survey periods
period: NOON | condition: HOT
period: DAWN | condition: COOL
Cross-check
Match A.tag to B.tag.
Match A.period to C.period.
A.status is not cancelled.
A.status is not draft.
Report C.condition.

Record result: _____

Desert Shade Shelter

Player clue 5: Food | Team 1

Use only the fictional food-web rules printed here. Start with the food available now. A creature becomes available when its food rule is met. Find which named visitor can live here; a loop cannot create its own first food.

Dune-model food web

NIB needs SEED

GLIM needs NIB OR BERRY

PEEP needs NIB AND LEAF

LOOP needs TWIN

TWIN needs LOOP

Starting conditions

Available now: SEED.

A result becomes available when its needs are met.

Which of GLIM, PEEP, LOOP becomes available?

Food result: _____

Desert Shade Shelter

Player clue 6: Final | Team 1

Recover one requirement for each habitat layer from its named result. Choose a matching roof, floor, water source, food and entry. Write the five part IDs in the printed layer order, then point to the evidence supporting each choice.

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

Habitat construction key
Roof (Habitat): ARCH=shade; LEDGE=sun
Floor (Kit): A-B=dry; A-B-C=damp
Water (Window): R=still; M=flow
Food (Record): COOL=leaf; HOT=seed
Entry (Food): PEEP=wide; GLIM=narrow
Parts (one per layer, top to bottom)
Roof: R2=sun; R1=shade
Floor: F1=dry; F2=damp
Water: W2=flow; W1=still
Food: D1=leaf; D2=seed
Entry: E2=narrow; E1=wide
Build rule
Choose each part meeting its recovered requirement.
Report five part IDs top to bottom, with hyphens.

Final result: _____

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

Desert Shade Shelter

Hint level 1 - HOST ONLY

1. Habitat

Read the dune-shelter field cards and the requirements.

2. Kit

Read each supply card and the three required needs.

3. Window

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

4. Record

Start with the status field in Shade cards.

5. Food

Start with the available-food line, not with the visitor names.

6. Final

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

Desert Shade Shelter

Hint level 2 - HOST ONLY

1. Habitat

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

2. Kit

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

3. Window

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

4. Record

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

5. Food

AND needs both foods. OR needs either food. A circular pair still needs an outside starting food.

6. Final

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

Desert Shade Shelter

Hint level 3 - HOST ONLY

1. Habitat

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

2. Kit

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

3. Window

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

4. Record

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

5. Food

Mark each creature whose food is already available; repeat until no new creature can be marked. Then compare only the listed visitors.

6. Final

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

Desert Shade Shelter

Team 1 result record

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

Habitat: _____

Kit: _____

Window: _____

Record: _____

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.

Desert Shade Shelter

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.

Desert Shade Shelter

You're invited to a mystery!

Join Birthday Explorer for Desert Shade Shelter.

Shade, dryness and access are separate requirements; a nearly suitable card may fail just one. Work together to design the dune-creature shelter.

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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Desert Shade Shelter

Mystery Explorer

Presented to Birthday Explorer

Team member: _____

For completing Desert Shade Shelter with curiosity, teamwork and kindness.

The paper model uses parts R2-F1-W2-D1-E2, with every habitat layer matched to its evidence. Thank each teammate for a different piece of reasoning.

Date: _____

Host signature: _____

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