



SPACE ACADEMY

GLOBAL / REGIONAL SCIENCE EDUCATION



Middle East Desert & Urban Skies

REGIONAL LEARNING EXTENSION

Practical learning for diverse desert and city environments.

FOUR FOCUSED LEARNING INVESTIGATIONS

Independent free astronomy education / global Academy

Teach with local relevance.

Practical, credible desert-and-city astronomy education that responds to heat, dust, lighting and environmental observing questions.

GLOBAL SCIENCE, LOCAL QUESTIONS

ASTRAVYR Space Academy uses internationally relevant astronomy and Earth-science ideas. These are adaptations for discussion and educational enquiry, not claims about a particular school, reserve, island, city, telescope or research partnership.

01 Desert and city comparison

02 Heat-safe sky science

03 Five principles after dark

04 Satellites and dry landscapes

A facilitator selects suitable ages, languages, accessibility, curriculum framing and local safety. All investigations have a paper/indoor version. Original Indigenous and historical cultural content requires knowledgeable local review.

Explore. Explain. Question.

01 / LEARNING QUESTION

Desert and city comparison

What changes between a hypothetical rural desert-edge sky and an urban night environment?

ACTIVITY

Discuss skyglow and the practical role of local weather, dust and light sources, using a fictional two-setting scenario.

LOOK FOR

A comparison chart distinguishing conditions that require measurement.

Reference: <https://darksky.org/>

02 / LEARNING QUESTION

Heat-safe sky science

What is a safe plan when outdoor conditions are unsuitable?

ACTIVITY

Prepare indoor sky-model, printed photo and observational alternatives, including proper avoidance of direct solar observation.

LOOK FOR

A host decision tree with weather, dust, heat and supervision triggers.

Reference: <https://astro4edu.org/resources/>

Learn. Adapt. Apply.

03 / LEARNING QUESTION

Five principles after dark

Could a fictional public walkway meet users' needs with less unwanted spill?

ACTIVITY

Apply the five responsible-lighting principles to an example public realm scene, without prescribing actual engineering ratings or local legal compliance.

LOOK FOR

One context-sensitive sketch with assumptions and professional review noted.

Reference: <https://darksky.org/what-we-do/advancing-responsible-outdoor-lighting/>

04 / LEARNING QUESTION

Satellites and dry landscapes

How can measurements support informed questions about land temperature or changing surface conditions?

ACTIVITY

Use a NASA Earth-science example and identify sensor capabilities and uncertainties before proposing an environmental research question.

LOOK FOR

A measurement-evidence-use chain with a clearly named limitation.

Reference: <https://science.nasa.gov/earth/>

Make learning trustworthy.

FACILITATOR QUALITY CHECKLIST

- Do not assume every Middle East environment is a clear desert observing site.
- Plan temperature, dust, site access and appropriate supervision; indoor alternatives always available.
- Treat astronomical heritage as location-specific and source-backed; no invented historical narratives.
- Do not imply research, school or government partnerships or certify lighting schemes.

SHOW YOUR SCIENCE SOURCES

Desert and city comparison / <https://darksky.org/>

Heat-safe sky science / <https://astro4edu.org/resources/>

Five principles after dark / <https://darksky.org/what-we-do/advancing-responsible-outdoor-lighting/>

Satellites and dry landscapes / <https://science.nasa.gov/earth/>

These documents are independent ASTRAVYR teaching resources. Their source references do not imply review, affiliation, endorsement, DarkSky certification or accredited learning. No participant details need to be collected, and no organisation has been contacted through this programme.