



TAQYEEM STEAM — WORKED EXAMPLE

"Can art make people notice the environmental problems they normally ignore?"

Domain: Visual Arts • Environmental Science • Design • Communication

Level: Grades 9–10 • Ages 14–16

Alignment: Vision 2030 (sustainability) • SDG 11 (sustainable cities) • SDG 12 (responsible consumption) • SDG 13 (climate action)

TAQYEEM STEAM
ARTS • ENVIRONMENT • DESIGN • COMMUNICATION

Can art make people notice the environmental problems they normally ignore?

An art installation that turns invisible waste into a visible message.

Domain:
Visual Arts • Environmental Science
Design • Communication

Level: Grades 9–10 (Ages 14–16)

VISION 2030
Sustainable Development
Kingdom of Saudi Arabia

FINAL INSTALLATION ONE WEEK
The number of plastic bottles collected from our school in 7 days.

1 INVESTIGATION
Observing. Documenting. Asking.

2 ARTISTIC RESEARCH
Exploring ideas and strategies.

3 PROTOTYPE 1
First version of the installation.

4 AUDIENCE TESTING
Collecting responses and feedback.

5 ITERATION
Refining the artwork based on evidence.

6 FINAL WORK
A stronger message, greater impact.

Same place.
Same waste.
A different perspective.

How a conventional class would do this (the thing we replace)

The teacher explains environmental pollution, shows examples of environmental art, and asks students to produce an artwork about an environmental issue. Students may make a poster, sculpture, painting, or collage and submit the finished product for a grade. The artistic message is assumed to be successful

because the teacher understands what the student intended. There is little investigation of the local problem, no systematic audience testing, and no requirement to revise the artwork in response to evidence.

How TaqyeemSTEAM does it — stage by stage

Stage 1 — Socratic Launch *(inquiry, not lecture)*

The mentor does not begin by explaining environmental art. They ask:

"What environmental problems do people in our community see every day?"

"Why do people stop noticing them?"

"Can something become invisible simply because we see it too often?"

"If you had no words, how could you make someone notice it?"

Students investigate their school or neighbourhood through observation and photography. They identify an environmental problem that people encounter regularly but may no longer notice — discarded plastic, food packaging, electronic waste, litter, or excessive disposable materials.

The student must formulate a hypothesis before creating any artwork, for example:

"I think people ignore plastic waste because individual objects look insignificant. If I present the waste collectively, people may perceive its scale differently."

This is the think-like-an-artist step: observe, question, hypothesise — before any artwork is made.

Stage 2 — Investigation & Artistic Research *(project work)*

The student runs a three-track investigation:

Track A — Environmental investigation

- Document the selected environmental problem in a defined local setting (school, neighbourhood, or street)
- Photograph and categorise examples; collect simple counts or measurements over a defined period
- Investigate where the waste or environmental problem originates and who is responsible for it
- Map the problem spatially — where does it concentrate, when, and why?

The purpose is not to conduct advanced environmental science, but to ensure that the artistic intervention is grounded in an identifiable and verifiable real-world problem, not a general assumption.

Track B — Audience and community investigation

- Ask at least five community members: "What environmental problems do you notice around here?"
- Ask specifically: "Do you notice [the selected problem]? What do you think causes it?"
- Record and categorise responses: who notices, who does not, and what explanations people give
- Ask: "What would make you pay more attention to it?"

Community responses become evidence for artistic decision-making — not background decoration. If most people do not notice the problem, that finding shapes the artistic strategy. If people notice but feel powerless, that shapes it differently.

Track C — Artistic research

- Examine how artists and designers use scale, repetition, material, contrast, installation, photography, sound, digital media, or public space to attract attention and communicate meaning
- Study examples: Chris Jordan (scale and accumulation), Edward Burtynsky (industrial landscape photography), Plastic Bag Store (material satire), Gulf Futures (speculative design)
- Identify the specific artistic strategy each work uses and why it is effective
- Select strategies relevant to the student's communication problem — without copying an existing work

The artistic research is investigative, not decorative. The student is not looking for an artwork to replicate. They are identifying strategies that solve a specific communication problem: how to make people notice something they normally ignore.

Stage 3 — Prototype & Audience Testing *(where artistic thinking is built)*

The student creates a first prototype designed to make the environmental problem difficult to ignore. The medium is selected according to the intended effect on a specific audience, not because it is familiar or comfortable. Possible outcomes include:

- A sculpture made from discarded materials collected from the investigated site
- A photographic series documenting accumulation over time or across a defined area
- An installation in a public or school space using real collected waste
- A soundscape pairing recorded environmental sounds with a visual element
- A digital artwork or social-media campaign targeting a specific audience segment

For example, a student investigating disposable plastic bottles might collect every bottle discarded in one defined location over one week and arrange them in an installation showing the actual accumulated volume. The artwork could be titled "ONE WEEK". The intention is not to tell viewers that plastic pollution is a problem — it is to alter how they perceive the scale and reality of an otherwise ordinary object.

Before revealing the intended message, the student shows the prototype to at least five viewers and asks:

"What did you notice first?"

"What do you think this artwork is about?"

"What do you think the artist wants you to notice or feel?"

"Did the artwork change how you think about the issue, even slightly?"

All responses are documented. The student does not prompt, correct, or explain during the testing. They record what the audience actually perceives, not what the student intended.

Stage 4 — Iteration *(where evidence changes the artwork)*

The first prototype almost always fails to communicate the intended message fully. Common problems:

- Viewers notice the installation but interpret it as being about water consumption rather than plastic waste — a labelling problem, not a scale problem
- The artwork is visually striking but emotionally distant — viewers admire it rather than feel implicated
- The scale is too small to register the accumulation the student intended to show
- The location is wrong — viewers pass it without stopping, so it does not function as an intervention

The mentor asks:

"Your intention was to make people notice plastic waste.

What does your audience evidence tell you?

What specifically did not work, and why?

What would change if you altered the scale?

The location?

The framing?

The material?"

The student revises the artwork using the evidence collected. They may change its scale, arrangement, material, location, visual emphasis, sound, lighting, or accompanying text. The revised work is tested again where feasible.

The iteration log records: original intention → audience response → artistic decision → revision → subsequent response. Each entry requires the student to justify the revision with reference to evidence, not preference.

The iteration log is the single most compelling element for a university arts, design, or communication portfolio — it shows creative reasoning under evidence, not just a polished final object.

Stage 5 — Assessment at the Service of Learning *(the differentiator)*

The student's work is assessed through separate dimensions rather than a single judgement of whether the artwork is visually attractive. TaqyeemSTEAM's assessment framework explicitly separates:

- Environmental understanding — can the student accurately describe the problem and its local context?
- Artistic intention — is there a clear, reasoned connection between the problem and the chosen medium?
- Artistic decision-making — can the student justify every significant creative choice with reference to the investigation?
- Evidence-informed design — does the artwork develop in response to audience evidence, or only in response to the student's preference?
- Communication effectiveness — do audiences receive the intended message, and how does the student know?
- Iteration quality — does the revision log show genuine reconsideration, or only cosmetic changes?
- Reflection — does the student understand what their work achieved and what it did not?

A visually attractive artwork that communicates little to its intended audience should not automatically receive the highest assessment score. Conversely, an unconventional or materially rough artwork should not be penalised simply because it does not conform to a teacher's preferred aesthetic. The central question is whether the student can justify artistic decisions and demonstrate how evidence informed the development of the work.

The project runs through five lenses:

- Self-assessment — student evaluates the artwork against the criteria before receiving any external judgement
- Peer review — viewers respond to the artwork using the same communication criteria the student used
- Teacher assessment — evaluates artistic and environmental reasoning against the rubric
- Mentor assessment — evaluates the quality of inquiry, iteration, and evidence-informed design
- AI check — for documentation completeness, iteration log coverage, and evidence linkage

Stage 6 — Competition & ePortfolio *(external validation)*

The finished project — environmental evidence, photographs, artistic research notes, prototype documentation, audience response transcripts, iteration log, final artwork, and written reflection — is entered into the TaqyeemSTEAM online competition.

Whether it places or not, the student now has a documented artistic investigation rather than a single finished object. The portfolio is externally validated, structured for public scrutiny, and timestamped at each stage — making it impossible to fabricate retrospectively.

The competition context also requires students to present and defend their work to judges and peers, developing the ability to articulate creative reasoning under questioning — a skill directly relevant to interview processes at art and design institutions.

Stage 7 — Portfolio & Future Application *(the outcome)*

When this student applies to arts, design, environmental communication, architecture, media, or related programmes, they do not write a vague "I am passionate about art and the environment." They submit:

- A documented environmental investigation with photographic evidence and community response data from a real local context

- An artistic research record showing how they identified and evaluated strategies used by professional artists to solve communication problems
- A prototype and audience-testing report showing what the first version achieved and what it did not
- An iteration log demonstrating how audience evidence — not personal preference — drove revisions to the work
- A final artwork with a documented communication outcome: whether the message was understood, and by whom

That is precisely what selective fine arts, design, environmental communication, and media programmes — and their scholarships — are looking for. The student has built genuine creative reasoning along the way, not just a finished object.

The portfolio shows more than artistic production. It demonstrates observation, research, creative decision-making, communication, responsiveness to evidence, and reflective practice — the same capacities that selective university programmes and employers use to distinguish applicants.

One project, four problems addressed: artistic production instead of copying a model; real environmental investigation instead of a generic awareness poster; audience evidence instead of assuming communication has occurred; and documented iteration instead of rewarding only the polished final product.