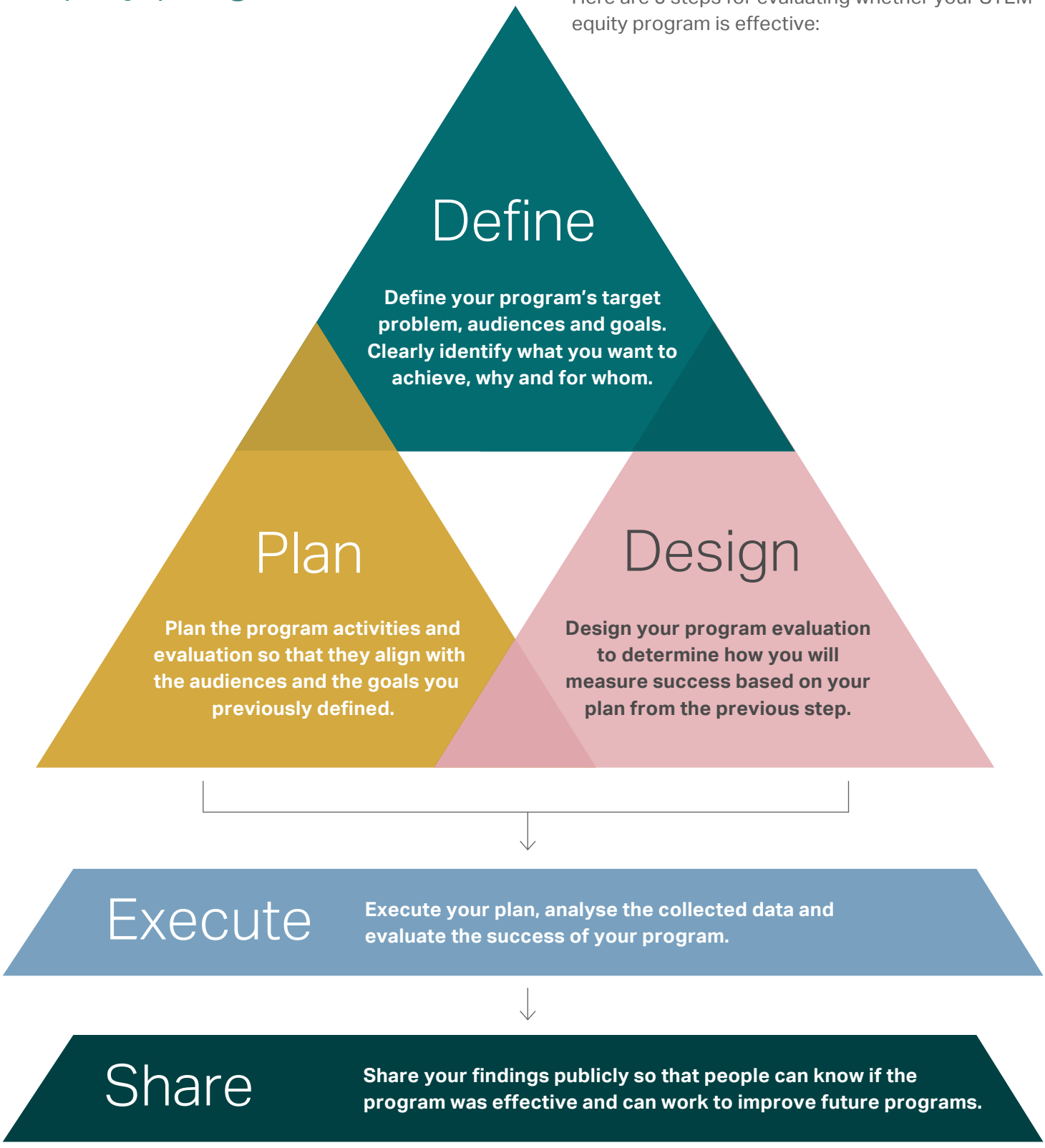
An Australian Government Initiative

Women in STEM Ambassador

The 5 steps to evaluate STEM equity programs

STEM equity programs seek to address the underrepresentation of girls, women, non-binary and other marginalised groups in STEM. By evaluating programs, we can understand if our actions are working to create positive change.

Here are 5 steps for evaluating whether your STEM equity program is effective:



Refer to the full evaluation guide at womeninstem.org.au.

DEFINE

Set the stage for the program and its evaluation by defining the problem, audiences and goals.

THE PROBLEM

WHAT IS THE PROBLEM THAT YOUR PROGRAM ADDRESSES?

There are many different issues that contribute to the underrepresentation of girls, women, non-binary and other marginalised groups in STEM, including stereotypes, bias and workplace culture.

THE AUDIENCES

WHO ARE THE PROGRAM AND EVALUATION FOR?

Consider the problem you want to address and identify who is involved and who is interested in the results. There are typically two audiences:

PROGRAM: The people participating in your program, such as people working in STEM, teachers, STEM organisations, parents and carers.

EVALUATION: The people interested in the evaluation findings, such as your organisation, program partners, funders and government. Defining this audience helps you prioritise who you share evaluations with and what information to highlight.

THE GOALS

WHAT DO YOU WANT TO ACHIEVE?

Define the specific and targeted changes you want the program to produce. Use the STEM Equity Evaluation Portal to help you.

OUTCOMES: What short- to medium-term changes do you want to see?

IMPACTS: What long-term changes do you want to see?

PLAN

Plan the different elements of your program. This is the most important step in the program and evaluation process.

ACTIVITIES

WHAT WILL YOU DO TO ACHIEVE YOUR GOAL?

An activity is a thing that a person or group does to reach a specific goal.

Always remember the audience and goals that you have already defined. Then choose the program activities that are likely to elicit the outcomes (and eventual impact) you want to achieve.

As you determine your program activities, consider:

INPUTS

WHAT IS NEEDED?

Identify the resources your program needs such as time, human, financial and material.

OUTPUTS

WHAT IS DELIVERED?

Outline the direct services, events, products and deliverables that your program will generate.

EVALUATION PRIORITIES

HOW WILL YOU MEASURE WHAT IS ACHIEVED?

Identify the purpose of the evaluation and what is most important. You can't evaluate every aspect of your program, so only choose three priorities that you want to understand the most. Identify the key questions that you want the evaluation to answer based on your priorities.

INDICATORS

Determine the indicators for each of the key questions you identified in the previous step. Use the STEM Equity Evaluation Portal to help you.

'Indicators' are markers that demonstrate if, and what, change is happening.

DESIGN

Building on the previous planning you have done, it's time to use the information you gained from aligning your audiences, goals, activities and priorities to design your evaluation.

EVALUATION APPROACH

WHICH EVALUATION APPROACH WILL YOU CHOOSE?

The four common approaches to evaluation are:

- POSTTEST: Collect data after the program.
- PRETEST/POSTTEST: Collect data before and after the program.
- TIME SERIES: Collect data over regular intervals of time.
- RETROSPECTIVE PRETEST/POSTTEST: Collect data retrospectively (pretest) and also after the program (posttest).

DATA COLLECTION

WHAT DATA COLLECTION METHOD WILL YOU USE?

There are three main methods to collect and analyse data:

- QUANTITATIVE: Uses numerical data that can be analysed using statistics.
- QUALITATIVE: Uses data in the form of text, images, audio and video recordings.
- MIXED: Uses both quantitative and qualitative data collection methods.

INSTRUMENT

WHAT INSTRUMENT WILL YOU USE?

Develop the data collection tool you will use. Use an existing instrument from the STEM Equity Evaluation Portal to collect data. If you must, you can modify one or create your own. Test the instrument and your method to make sure it works as planned and measures what it is intended to.

SAFEGUARD

WHERE AND HOW WILL YOU MANAGE YOUR DATA?

You must have a robust data management plan that outlines how you will collect, store and safeguard your data and protect your participants. Consult the Australian Privacy Act.

EXECUTE

With your program and evaluation already planned and designed, it's time to put it into action.

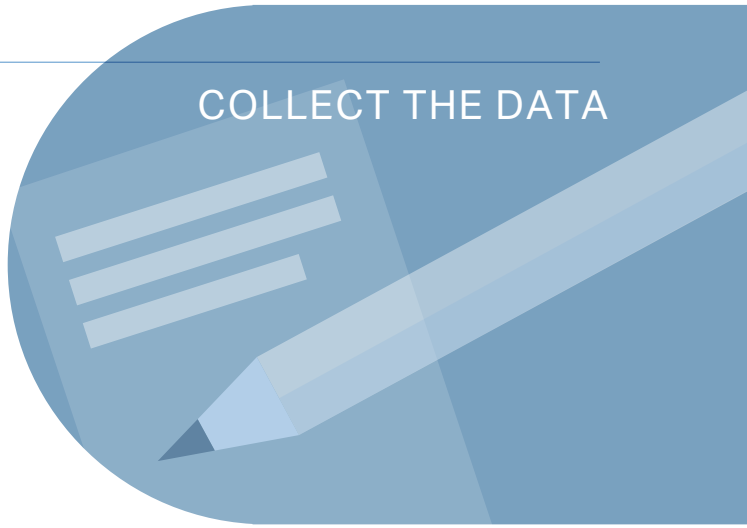
RECRUIT PARTICIPANTS

WHO WILL PARTICIPATE IN YOUR EVALUATION?

Think about how you will invite people to take part in your evaluation. You can send them an email, put an ad on social media or ask them over the phone.

Always ensure you **get consent** from the participants.

COLLECT THE DATA



HOW WILL YOU GATHER AND RECORD THE INFORMATION?

Make sure to keep good records and document the information carefully and accurately. Record the dates, time and locations of any interviews or notes. Detail problems that arise or any changes to the procedures.

ANALYSE

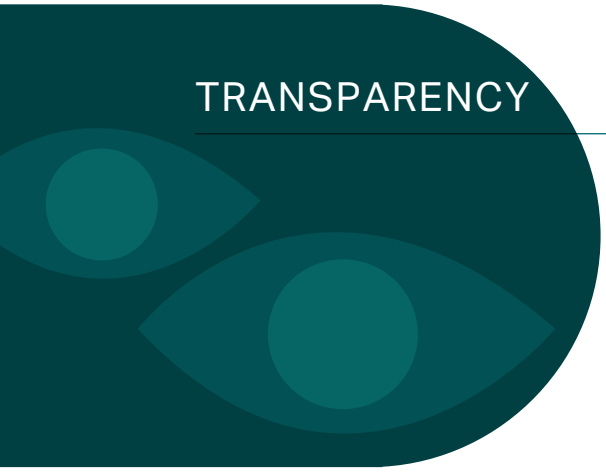
HOW WILL YOU EXAMINE, SUMMARISE AND EXPLAIN THE DATA?

Summarising and analysing data helps you interpret information and give it meaning.

- QUANTITATIVE DATA: Analyse the data using statistics and display the results as tables, charts and graphs.
- QUALITATIVE DATA: Analyse the data using word clouds, sentiment analysis or by tagging data into categories.
- MIXED METHOD: Apply the analysis for both types of data and compare the results.

SHARE

The final step in the evaluation process is to share your findings publicly and with your funders, partners and other stakeholders.

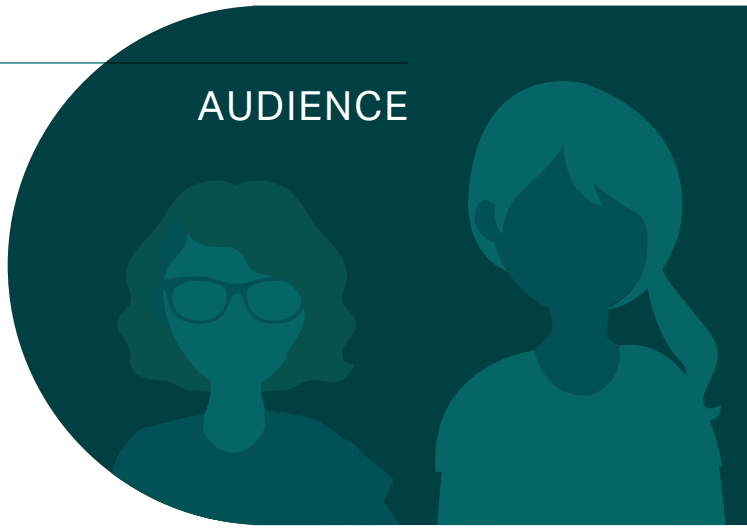


TRANSPARENCY

WHAT INFORMATION WILL YOU SHARE?

Do not cherry-pick the results you share. Present everything and be transparent and honest with your stakeholders; they will appreciate it.

AUDIENCE



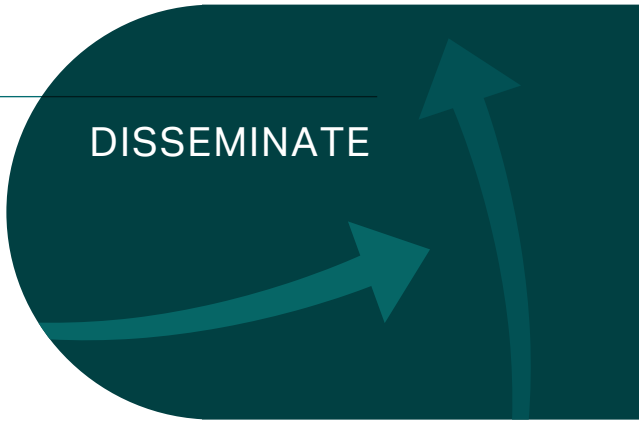
WHO IS READING THIS INFORMATION?

Always keep your evaluation audience in mind. This could be program designers, facilitators, partners, funders or even government agencies. Think about why they are interested in this information and what they may use the results for.

ORGANISE

HOW WILL YOU ORGANISE THE REPORT?

A well-organised report will be easy for your audience to read and understand.



DISSEMINATE

WHO WILL YOU SHARE THE INFORMATION WITH?

Share your evaluation report with key stakeholders and the wider public. Publishi your evaluation on the STEM Equity Evaluation Portal to get the maximum impact from your evaluation.

Evaluation Planning Tool

Use the STEM Equity Evaluation Portal or this worksheet to define, plan and design your evaluation.

1. DEFINE

PROBLEM
What issues does the program address?

AUDIENCE

Program participants
Who is the program for?

Evaluation audience
Who is interested in the evaluation?

GOALS
SMART / Specific - Measurable - Achievable - Relevant - Time specific

Outcomes - Short-term
(immediate to 1 year)

Outcomes - Medium-term
(2-4 years)

Impacts - Long-term
(5+ year)

2. PLAN

ACTIVITIES

Activities
What will participants do?

Inputs
What is needed?

Outputs
What is delivered?

EVAL. PRIORITIES
1-3 priorities for evaluation

KEY QUESTIONS
What questions will eval. answer?

INDICATORS
What demonstrates the outcomes?

3. DESIGN

DESIGN APPROACH
Pretest, posttest, time series?

METHOD
Qualitative, quantitative, mixed?

DATA COLLECTION TOOL
Survey, interview, observation?

Adapted from W.K. Kelloggs (2004) and Biggs and Tang (2011)