



Science and Engineering Challenge qualification system 2023

The overriding principles for the Science and Engineering Challenge (SEC) qualifying system are **transparency, fairness** and **scalability**. The following policy will be used to guide schools' progression through the SEC competition from a regional event to the National Final.

SUMMARY

This document details the SEC qualification policy as approved by the National Science and Engineering Challenge Council. Below is a brief overview and index of the policy:

- There are 3 levels in the SEC competition: Regional, State and National.
- A **maximum of 8 teams** compete each day and the overall highest-scoring team wins.
- School teams consist of 32 Year 10 (or younger) students. Teams may be smaller or combined, but **must not exceed** 32 individuals or include senior (Year 11/12) students.
- Only a school's first entry will count towards qualification to higher competition levels.
- In one calendar year, the same 8 activities and corresponding scoring systems are used at all Challenge Days in Australia.
- Rules and scoring are to be applied fairly and consistently to all teams competing against each other in the same session.
- Where there are any disputes it is the Team Leader's discretion to null or disqualify scores to maintain fairness. Results announced at the end of the event are final.
- The winning team will receive a certificate and trophy on the day of the event.
- Qualification to higher levels of competition is dependent on the ranking of winning teams determined by score and the number of places available at the State Final.
- If there is no State Final, the one highest-scoring winning team from all regional events in that state/territory will be invited to the National Final.
- The National Final is generally held on the last Friday in October each year at a different location in Australia. There are eight (8) spaces at the National Final for teams representing NSW & ACT (combined), QLD, VIC, TAS, SA, NT and WA – plus one local 'wildcard entry' (winning team from host region).

For further detail, please consult the following sections:

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SCORING

The standard SEC scoring system is used at all events. The highest-scoring team on each day wins. In the unlikely event that there is a tie for first place, i.e. exactly the same score to 10 decimal places, both teams will be declared winners and will receive a trophy but only the team with the largest cumulative winning margin (i.e. the difference in score between first and second) across all activities will progress to next level of competition.

SCORING PROCEDURE

The SEC has very well-defined procedures for scoring activities and entering results into the electronic score sheet. Staff are carefully trained and procedures are always followed. A neutral third party, usually the Local Organiser or a member of the activity personnel, performs a triple check of the accuracy of data entry prior to the final results being announced. The likelihood of an error being made using this system is negligible.

The result read out at the end of the event will be considered final. There is no recourse to dispute a result after that time.

TEAMS

School teams must be no fewer than 16 and no more than 32 students.

Students must be in Year 10 or below. No senior students (year 11 or above) can compete.

Each team is divided into eight colour groups. Each group does one or two activities per day.

Where a school has fewer than 16 students in a team, they may combine with another school. Should the combined team win, both schools will receive a trophy. If their team qualifies for the State Final, both schools will be invited to compete as one combined team.

A maximum of eight teams compete per day. (Note: more than eight schools may be competing per day, if two or more schools combine to form one team.) Nine team days are not allowed.

LEVELS OF COMPETITION

The SEC competition is divided into (1) Regional (where necessary regions are grouped into zones), (2) State, and the highest level of competition, (3) National.

1. Regional Challenge Days

Regional Challenge Days may be conducted in any suitable location in partnership with a Local Organising Committee, University, or other partner organisation.

Only high school Challenge Days (i.e. not a 60 minute Challenge, Build ME a Future Day, or Discovery Days) are eligible to be part of the national competition. A school must compete at a regional event in their state in order to qualify for State or National events.

The activities at the Regional Challenge Day will be clearly stated in the Teacher's Guide for that event. Students are encouraged to select the activity/activities that interest them. Teachers record the students' activity-colour selections on the Participant Registration Form, which must be emailed to the Local Organiser one week before the event.

Schools may enter more than one team where there is space in the competition and the Local Organising Committee agrees. Only the school's first team entry is valid for the purpose of national qualification.

Please note that schools are not allowed to compete in the national competition in different states in the same year, e.g. at a regional Challenge Day in Northern NSW and Southern QLD.

2. State Finals

The State Final series brings together the winning teams from around each state - defined by the Australian geopolitical borders, including territories*.

State Final day(s) can be conducted in any suitable location in partnership with a Local Organising Committee provided they have previously run a regional event and have approval from the SEC. Where there are several applications to host the State Final, the SEC office will determine the most suitable applicant.

How are State Final competitors selected?

There are two State Final qualification models:

Model 1 – for a small to medium-sized competition – is used when there are enough places in the State Final for the winning team from each regional Challenge Day.

- Less than 4 Challenge Days in the state or no Final host: the state's highest-scoring team receives direct entry to the National Final.
- 5-8 regional Challenge Days in the state: each winning team will be invited to compete at a one-day State Final.
- 9-16 regional Challenge Days in the state: each winning team will be invited to compete at a two-day State Final.
- 17-24 regional Challenge Days in the state: each winning team will be invited to compete at a three-day State Final.

Any unfilled places are filled by the highest-scoring second placed teams.

Model 2 (zones) – for a large competition and/or a small number of State Final days – is used when there are more regional Challenge Days in the state than there are available places in the State Final. In this case the SEC office will group regional Challenge Days into zones and depending on the number of Challenge Days within each zone, one or more winning teams from within each zone will compete at the State Final (see: *How are zones defined?* below).

Any spare places in the State Final (from withdrawals) are filled by the next highest-scoring winning teams from within the same zone as the withdrawing team.

The host region can be granted a wildcard entry to the state final upon request to SEC.

Eligible schools will be invited to the State/National Final by the SEC Team Leader for that event.

The students do not need to have competed at a regional Challenge Day, although advantageous.

The activities at the State Final will be clearly stated in the Teacher's Guide. Teachers are to fill in the Participant Registration Form, assigning students to colour groups; however, the activities allocated to each colour group will be drawn randomly at the start of the event on the day. Students are not permitted to change colour groups after the draw.

Qualifying schools must confirm their attendance within 14 days of notice. In instances where qualifiers are known or invited less than 14 days before the State Final, your school should be prepared to provide notice sooner than this. It is disruptive and disrespectful if a school does not attend a State Final without providing suitable notice. If the highest-scoring winning school is not able to attend, their place will be offered to the next highest-scoring winning school from the region/zone.

** There are currently two exceptions to the state boundaries:*

- *The winner of the Albury-Wodonga regional Challenge Days competes in the NSW State Final.*
- *The winner of the ACT regional Challenge Days will compete in the NSW State Final.*

How are multi-day State Final places filled?

Where a State Final runs for more than one day, all State Final days are filled sequentially.

For example, if the State Final runs for 2 days, there will be 16 places available:

- The winner of first regional day in the state (1) competes at State Final day 1, position 1
- The winner of next regional day (place 2) competes at the State Final day 2, position 1
- The winner of next regional day (place 3) competes at the State Final day 1, position 2
- The winner of next regional day (place 4) competes at the State Final day 2, position 2
- ...and so on until all 16 places in the 2-day State Final are full.

This system allows regional winners to know immediately when they are to compete. It also minimises the likelihood of schools from a multi-day regional event competing against each other at the State Final.

How are zones defined?

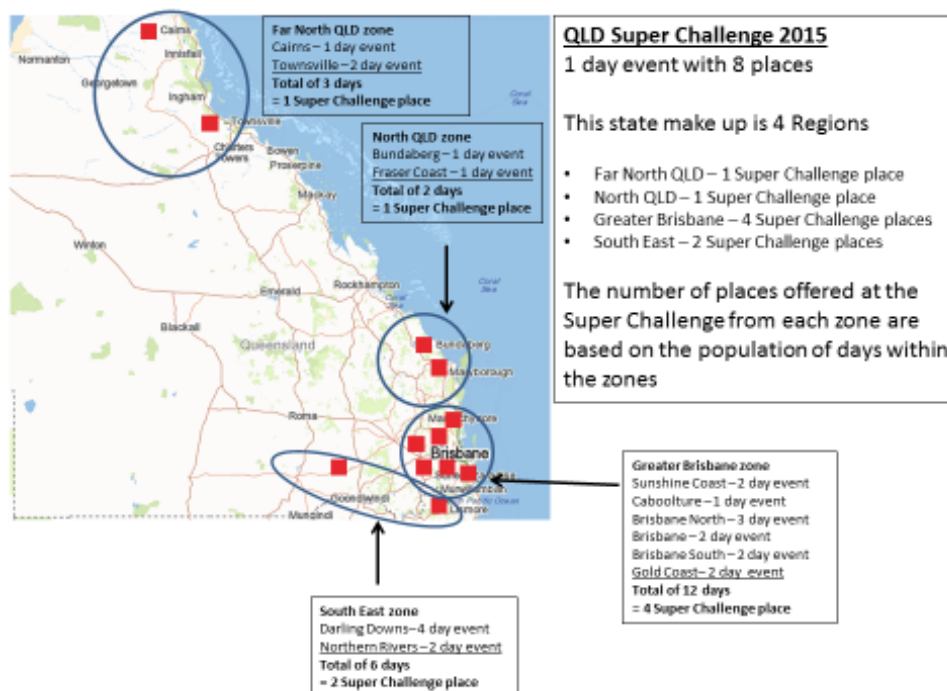
A zone is a geographic grouping of regions used when there are more regional Challenge Days within a state than there are places in the associated State Final. The size and location of all zones, as well as the associated qualifying arrangements for each state is reviewed by the SEC at the beginning of each calendar year.

The number of places for winning teams from each zone at the State Final is proportional to the number of regional Challenge Days within the zone.

In some cases a zone may be composed of just one regional event (of 1 or more days).

For example, referring to the map below, the 2015 Queensland zones were set as follows:

- There were a total **23** regional Challenge Days in all of Queensland.
- The local organising committee for the Queensland State Final decided on a one-day State Final. That meant there were a total of **8** places available.
- Each zone was then set by grouping nearby regional events together in such a way that each zone received one place at the Queensland State Final for every 3 (24/8) regional Challenge Days within the zone. See the map below:



3. National Final

Each year the winner of the entire Australian Science and Engineering Challenge competition is determined at the National Final. The National Final is usually held on the last Friday in October each year. The location of the event varies and is determined by the following process:

Early each year the SEC office will invite expressions of interest to host the following year's National Final. Where there are several applications, the National Science and Engineering Challenge Council, NSECC, will determine the most suitable host.

The National Final can be conducted in any suitable location in partnership with a Local Organising Committee or University. The host organisation must have run a regional event, and ideally a State Final.

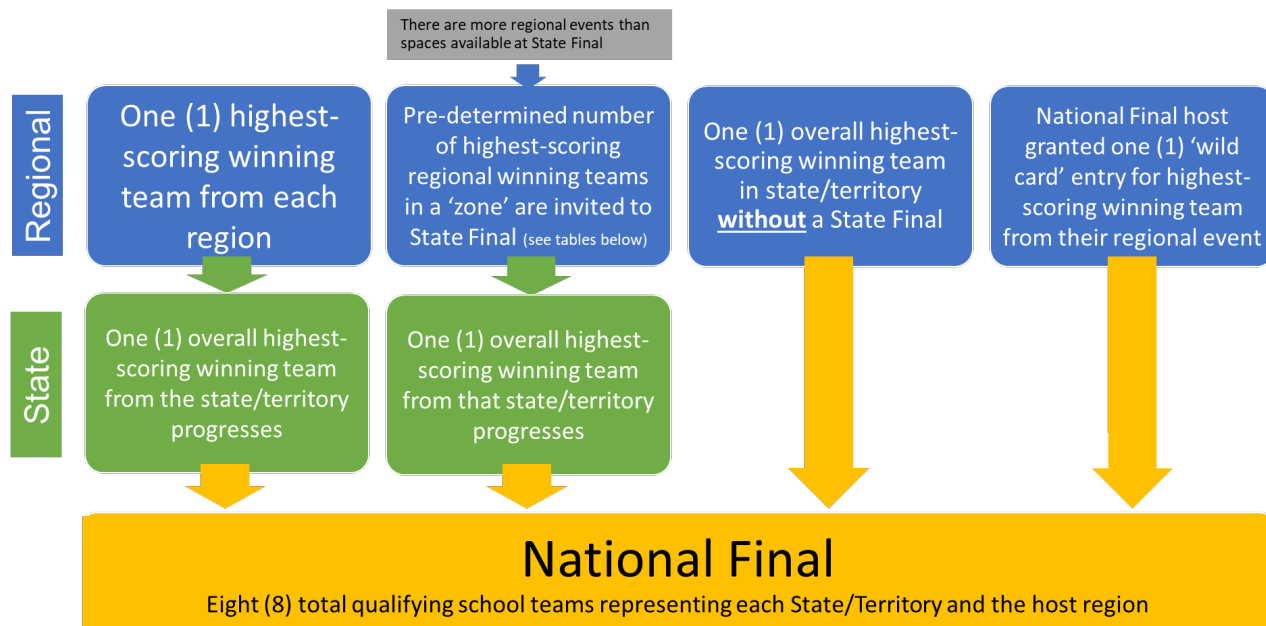
The one-day National Final event brings together the highest-scoring winning team from:

1. New South Wales and Australian Capital Territory
2. Queensland
3. Victoria
4. Tasmania
5. South Australia
6. Northern Territory
7. Western Australia
8. A 'wild card' place for highest-scoring winning school in the host region[#]

There are four pathways for a school team to qualify for the National Final:

[#] The one highest-scoring, winning team from the region hosting the National Final is guaranteed a place at the National Final. If this local team wins the State Final on its own merit, the wild card place is no longer available. In this situation, the place will be offered to:

- For a multi-day State Final (SF): The highest-scoring winner from the other SF days;



- For a single-day State Final: The next highest-scoring school from the state SF;
- Didn't run a State Final: The next highest-scoring regional winning school in the state.

The venue for the National Final will be finalised and publicised 12 months in advance.

Competing schools must make every effort to attend and confirm their attendance within 14 days of notice. If the highest-scoring school from a state is not able to attend the National Final, their place will be offered to:

- For a multi-day State Final (SF): The highest-scoring winner from the other SF days;
- For a single-day State Final: The next highest-scoring school from the state SF;
- Didn't run a State Final: The next highest-scoring regional winning school in the state.

If a state does not run a regional competition at all, their place at the National Final will be offered to the highest-scoring winning State Final qualifier from any state.

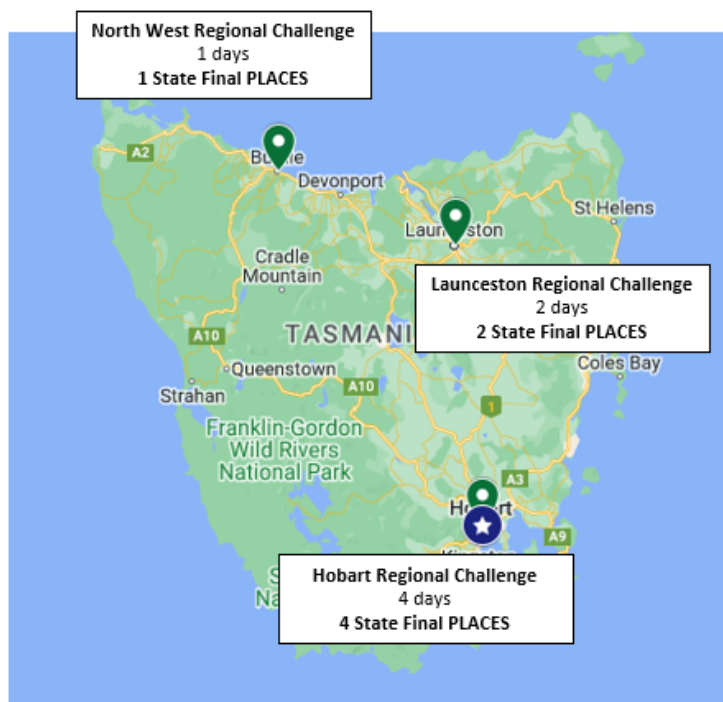
Teams must be between 16 and 32 students from the qualifying school(s); but no more. The students do not have to have competed previously, although this would be advantageous. As with the regional Challenge Days, all competing students must be in Year 10 or below.

The activities at the National Final will not be made public before the event. Teachers record students' colour (group) selection on the Participant Registration Form and email it to the Local Organiser before the event. The activities will be announced and randomly allocated to colours at the start of the event on the day. Students are not permitted to change colour groups after the draw.

2023 EVENTS AND QUALIFICATION ARRANGEMENTS – ZONES

The following maps are used for the purposes of determining the number of places granted to a region for qualification to higher levels of competition and are subject to change as the number of event days change.





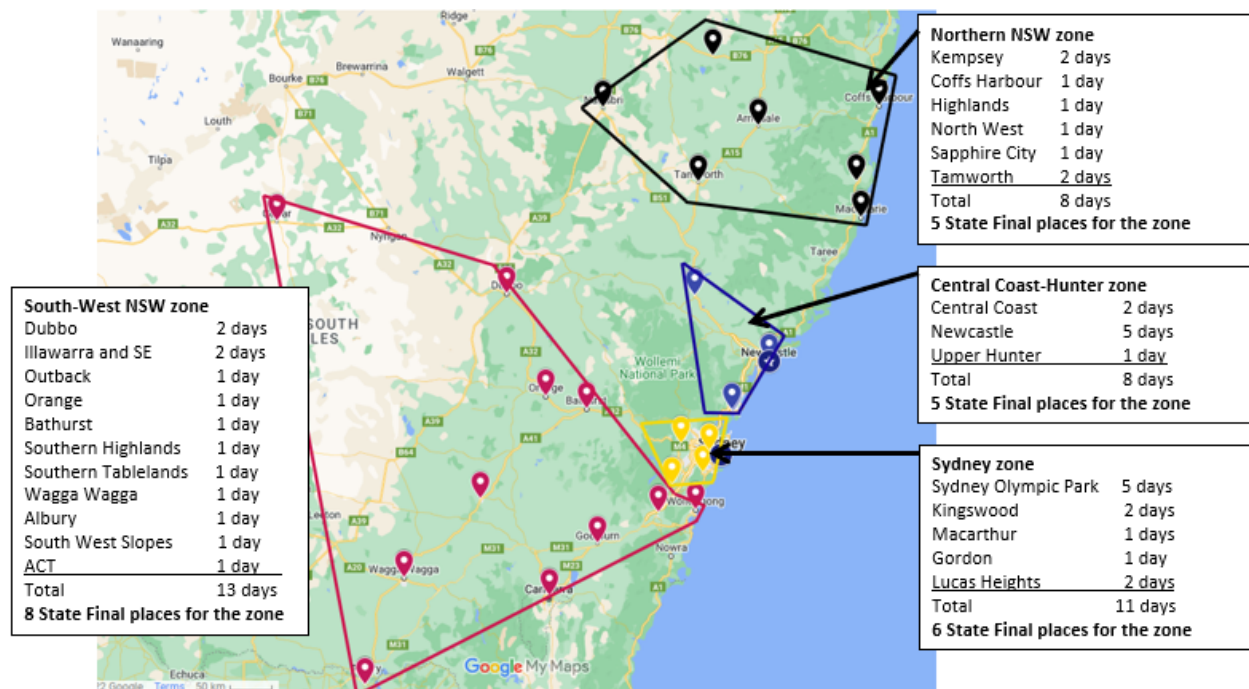
TASMANIA

In 2023 there is a 1 day State Final with places for 8 winning Tasmanian schools.

This state is composed of 3 regions running a total of 7 days.

- Every winning regional school proceeds to the State Final
- Your school must be from Tasmania to compete at the State Final.
- The highest scoring second placed team from the whole state also proceeds to the State Final.

NOTE: If no State Final is held the highest scoring school goes straight to the National Final



NEW SOUTH WALES

In 2023 there is a 3 day State Final with places for 24 winning schools.

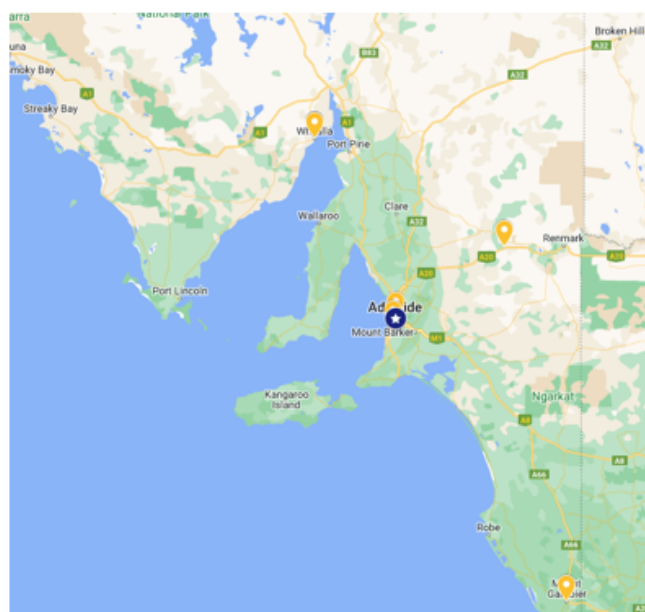
This state is composed of 40 regional event days within 4 zones. Each zone is awarded places at the State Final based on the amount of days within their zone.

Ruling – No more than 3 schools can qualify from any one Regional event.

- Your school must be from NSW to compete at the State Final (ACT exception)

NOTE: If no State Final is held the highest scoring school from NSW attends the National Final

SOUTH AUSTRALIA



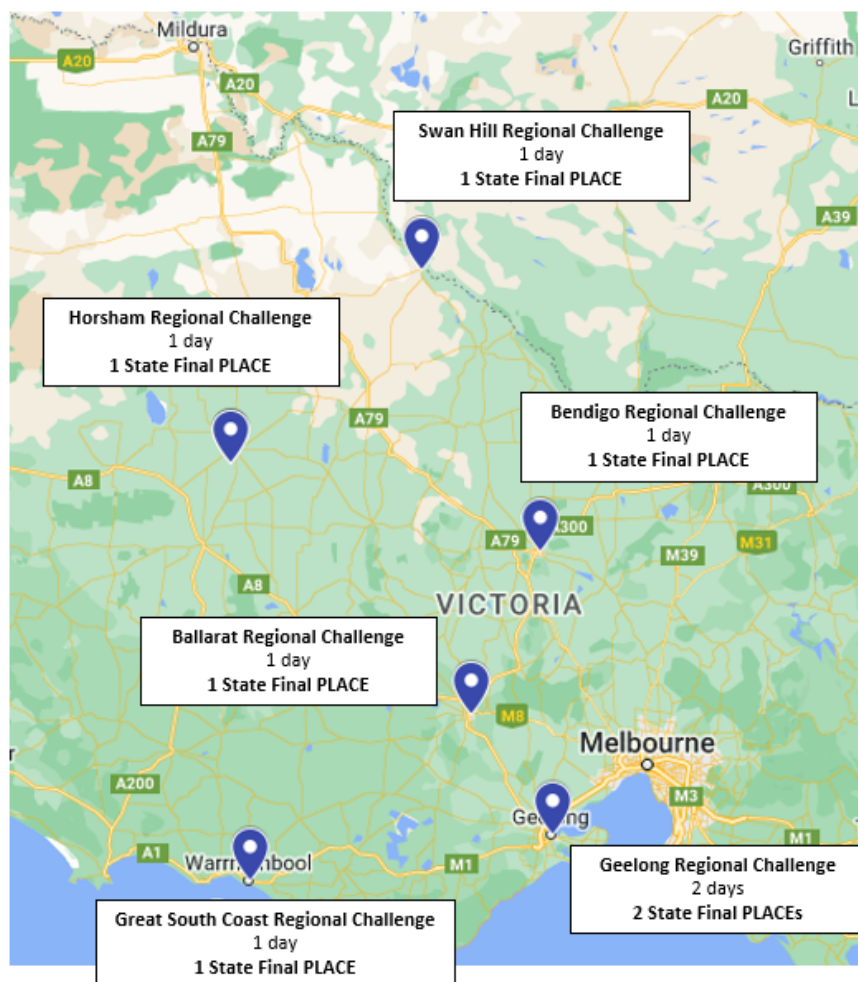
In 2023 there is a 1 day State Final with places for 8 schools.

In 2023 this state is composed of 4 regions running a total of 9 days.

Adelaide	4 days
Flinders	2 days
Mt Gambier	1 day
Riverland	1 day
Whyalla	1 day

- Your school must be from SA to compete at the State Final.
- The top 3 highest scoring winning teams from the Adelaide event and the winning school from each other location proceeds to the State Final.

NOTE: If no State Final is held the highest scoring school from SA goes straight to the National Final

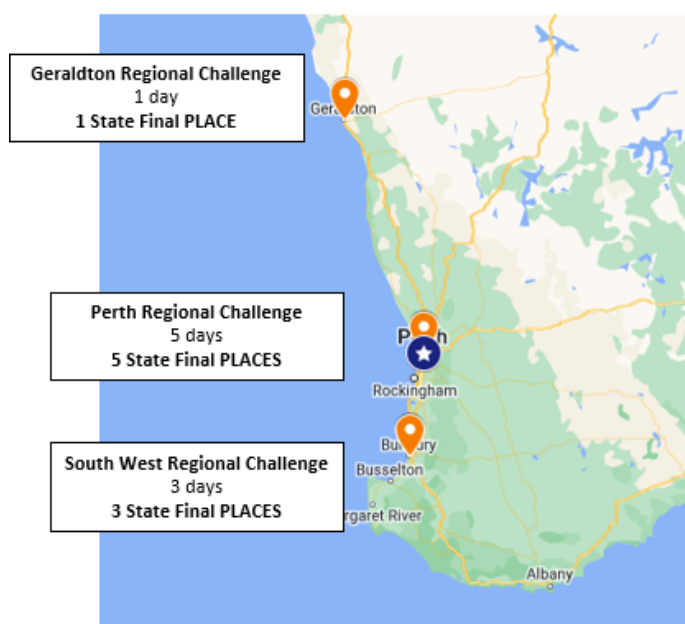


VICTORIA

In 2023 there is currently no State Final planned. Victoria is composed of 7 regions running a total of 7 days.

- Recommendation would be a 1 day State Final.
- Every winning regional school proceeds to the State Final.
- Your school must be from Victoria to compete at the State Final.
- The highest scoring second placed team from the whole state also proceeds to the State Final.

NOTE: If no State Final is held the highest scoring school from Victoria goes straight to the National Final.



WESTERN AUSTRALIA

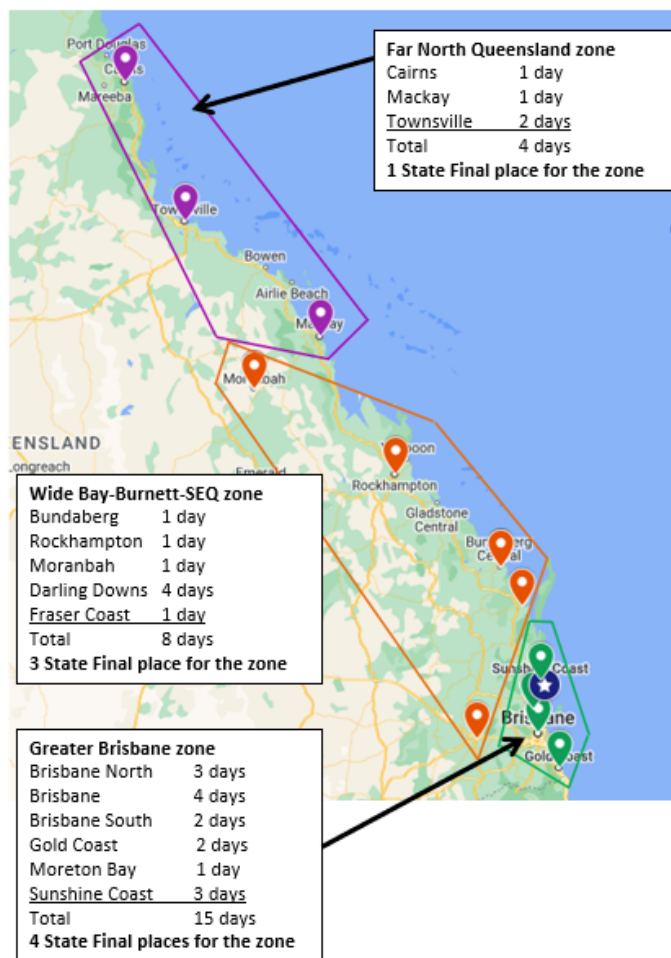
In 2023 there is a 1 day State Final. This state is composed of 3 Regional events running a total of 9 days.

Each zone is awarded places at a State Final based on their number of days. The allocations for 2023 are:

- | | |
|--------------|----------|
| • Geraldton | 1 places |
| • Perth | 4 places |
| • South West | 3 places |

Your school must be from Western Australia to compete at the State Final.

NOTE: If no State Final is held the highest scoring school from Western Australia goes straight to the National Final.



QUEENSLAND

In 2023 there is a 1 day State Final. Queensland is composed of 27 regional event days within 3 zones.

Each zone is awarded places at a State Final based on their number of days. The allocations for 2023 are:

- Far North Queensland zone 1 places
- Wide Bay-Burnett-SEQ 3 places
- Greater Brisbane zone 4 places

Ruling – Your school must be from QLD to compete at the State Final. Exception is the Northern Rivers competition.

- No more than 2 schools can qualify from any one Regional event.

NOTE: If no State Final is held the highest scoring school goes straight to the National Final



NORTHERN TERRITORY

In 2023 there will be no State Final in the NT

The territory is composed of 2 regional events

- Alice Springs (1 day)
- Darwin (1 day)

NOTE: The highest scoring winning school from anywhere in the territory will proceed directly to the National Final