The Wiltja Program is simultaneously a school and a residence – the urban annexe of the secondary programs being offered by schools in the APY (Anangu Pitjan tjatjara Yankunytjatjara) Lands. It provides Anangu (central Australian Aboriginal) students a secondary education in an urban setting with opportunity for personal extension through a range of structured programs at the school and the residence and the possibility of completion of the SACE (South Australian Certificate of Education).

Wiltja Secondary College is comprised of the educators at the middle school site (housed at Woodville High School), the senior campus (located as part of Windsor Gardens Vocational College) and the residence (at Northgate). It was, until recently, the only government-funded state boarding college. The South Australian Department of Children and Families funds the program and boarding facilities. Staffing for Anangu schools is on a 1:8 basis, in recognition of the complex lives and conditions of Anangu learners.

Wiltja’s ambition is to fully develop each student’s academic and social potential and to achieve the vision of the Anangu communities for the children to confidently ‘walk in two worlds’. Wiltja is effectively a 13th Anangu community based in Adelaide, an APY Lands school in an urban setting. Its explicit role is to teach students mainstream skills and how to function in the western world. The program structure is unique in that while it is a government-resourced program, the community has control over policy and direction and takes responsibility for the transmission of culture.

The decision for students to relocate to Adelaide for secondary schooling must be informed and considered. Students are selected on their academic and social skills so that they have a stronger chance of being successful when boarding. The selection of candidates is made collaboratively between families, Wiltja and the APY Lands school. This results in a relatively homogenous group of students, however, not all students attend all year or for all of their secondary schooling and this impacts on the structure and delivery of curriculum. Students who are able to attend
over a longer period of time enjoy greater success. While for most of its history Wiltja has been designed to serve the Anangu Lands, increasingly more students are coming from schools outside the Anangu areas, including from the Northern Territory and Western Australian. The focus, however, continues to be on those from Anangu schools.

Each year all the APY Lands schools are invited to bring groups of students to Wiltja for a short term experience and this ‘taste of an urban high school’ gives students, families and teachers an insight into whether or not Wiltja is the best choice for particular students. Additionally all potential students must participate in a trial before actual enrolment is considered. The main criteria for entry to the program is a willingness to engage – that the child actively wants to be there, that the family and community support the child’s placement and that the child has the social skills needed to live appropriately in the environment. Wiltja staff members believe that it is the residential side of the equation that determines retention in school and ultimately educational outcomes. By retaining students in the residence, then they attend school, and attendance is key to education. This is not to deny the impact of the school experience, since this is equally important in the provision of quality learning. The residence takes an active role beyond simply providing a secure place for the students to live, seeking to impact upon educational matters as much as school-based staff.

The Wiltja program is inclusive and openly flexible. It is not a program only for those with elite status in community. The aim is to provide an education to students with recognised capacity to learn, thus developing communities by educating students who will return to them. Wiltja offers a secondary pathway in a mainstream setting, and some students do not suit this pathway. For these reasons a comprehensive recreational program at the residence supplements academic and pastoral work at the school and enables students to be active agents – acting on the world rather than being acted upon.

**Boarding**

Boarding offers many benefits. First, it provides for the basic needs of learners – food, warmth, shelter – which are often missing in community life. By providing for their basic needs, students are able to attend school and focus on learning. Second, the boarding program offers a very rich educational program in out-of-school hours. Third, students are bussed from the boarding facility to school each day ensuring full attendance and effectively removing the option for truancy. A key measure for success is consistent attendance. Of course, the boarding program is more successful if students return after breaks/holiday periods. When students consistently return to boarding, their chances for success are greatly increased.

The boarding program offers a very comprehensive recreational program staffed by well qualified staff – often teachers. The program, which includes the Duke of Edinburgh’s Award, means that what is offered is both educational and social/physical. The ethos of the boarding school is to enhance learning rather than to simply provide basic needs. Students participate in a wide range of activities, many of which link into the wider community, thus building strong community links so that the students experience urban living. These have included working in soup kitchens, playing sport in nearby clubs and volunteering in an orphanage in Vietnam. Further, all students who complete their schooling at Wiltja leave the school with a driver’s licence and the possibility of other certificates including senior first aid and, for some students, surf lifesaving – valuable qualifications to hold when they return to their home communities.

Basic life skills are also taught. Students are required to make their own lunches to take to school, and take responsibility for the washing of clothes and linen. While these are useful skills it also helps to keep budgets in line and frees finances for use in other aspects of boarding life. Through exposing students to many aspects of urban life, they also come to see the need for other key life skills such as literacy and numeracy that are often not present in community.
Recognising the influence and importance of language and culture

As the school is governed by the PYEC (Pitjantjatjara Yankunytjatjara Education Committee), there is a strong influence and recognition of Anangu language, culture and vision. The school has been set up by this authority to undertake school business. Cultural business is the responsibility of the communities. The PYEC wants their students to walk in both worlds so accessing whitefella education is recognized and valued. The school is charged with providing this, enabling it to provide a comprehensive program tailored to meet the needs of the learners and to give them the confidence for walking strong in a non-Anangu world.

The school offers Pitjantjatjara lessons as several of the teachers speak the language and are supported by Anangu staff (when they are available). The lessons are to support the students to learn to read and write Pitjantjatjara so that they are literate in their home language. These lessons are invaluable for the students as they are the "experts" in this class, experiencing success and demonstrating mastery, and so this may help to break down many barriers to learning in other areas.
Defining success

Success at the school is quite an elusive concept since the students come from many backgrounds in terms of their exposure to schooling and their entry levels of numeracy. Some students come from communities where their home language and culture is vastly different to that of formal, mainstream schooling, whereas (increasingly) others are from larger regional areas where they have experienced mainstream schooling and their first language is English. This diversity creates different pathways through Wiltja and hence success is quite difficult to define and measure. A number of indicators are used to gauge the success of the program. These include the retention of students through the College, completion of SACE, and (relevant to this project) the increasing numbers of students who are able to complete higher levels of mathematics in their SACE including Mathematics Pathways or Mathematics Applications at Stage 1 and Mathematics Applications at Stage 2. More students are now moving into Mathematics Pathways due to their capacity to move beyond basic levels of numeracy in the senior years of schooling.

As the diversity of students entering Wiltja is vast in terms of their numeracy (and their consistent attendance at Wiltja), the parameters for success are relative. The goal of the school is for students to walk in both worlds, so for some students being numerate is a benchmark for success while for others it is the successful completion of a high level mathematics in the senior years. In the current NAPLAN test for Year 9, 50% of the cohort attained scores above the benchmark, while all except one were within 20 points of the successful cut off point. This suggests that the students are performing at least close to, or above, the Numeracy benchmark for Year 9.

Structure of the Wiltja Mathematics Program

The Bridging class is used to develop the basic skills in mathematics since the levels can be quite low and varied. Once students appear to have mastered basic skills in number and operations, they are moved into the Year 8 class. Time in Bridging is thus flexible and determined by the skill level of the student (along with their social skills).

Year 8 mathematics classes take students through a staged, very structured program, where teachers use a version of direct instruction. Resources are similar to those used in the Bridging class which targets skills that have been identified through assessment as needing support.

The programs used in the junior levels of secondary schooling are orientated towards addressing the gaps in students’ learning. The programs tend to be structured in terms of the levels in conceptual learning and are very explicit in terms of their aims. Resources have been developed within these packages that are about mastery of skills and the progressive moving forward within the concepts under exploration.

The social skill development in these two junior years is important so that the students are able to transition into mainstream classes.
Numeracy/Maths at Wiltja: Use of Commercial Resources

Many of the students find that they struggle with some aspects of mainstream mathematics due to gaps in their mathematics learning. The school has adopted a number of programs that are based on models of direct instruction. In the Bridging class, these have included the use of Farkato’s Junior Elementary Math Mastery program (for those needing up to Year 3 mathematics); while those working with concepts found in Grades 6-8 use the Elementary Math Mastery program. For success, it was critical for the students to be placed in the appropriate level within these programs. Two other programs are used to support learning – Jump into Maths, a program tailored for the individualized learning, and Studyladder, an on-line program that has students practise various number skills. The Studyladder program allows students to select various ‘games’ that are based on number skills. The success in these games is recorded for each student so teachers are able to track the games’ completion. Teachers monitor which games are being played and ensure that students do not repeatedly play the same games.
Providing Extra support for Mathematics

The Wiltja program offers extra timetable lines of mathematics in the first two years of schooling (Bridging and 8). In Bridging, this is simply built into the program in terms of time. In Year 8, students participate in both a mainstream class (taken by the Year 8s in the high school setting) and an extra Wiltja class to build skills and confidence as well as support the learnings from the mainstream class. When students attend mainstream classes, a Wiltja teacher will also be present to support students. This effectively doubles the time spent on mathematics in these years of schooling.

Immersion into Mainstream Mathematics Education

Most students entering Wiltja come from the APY Lands or similarly remote areas, where there is quite a diversity in the learning outcomes among the feeder schools, so students are placed in a graded system based on their needs in numeracy. Progression through the various levels is dependent on the progress being made by the student rather than being time- or age-related. Some consideration is given to age so that issues around shame are recognised, for example, in taking care in placing a student who is considerably older with younger peers.

All students commence in the Bridging program where they are assessed and provided with numeracy experiences to meet their needs. At the start of a new year, a significant component of Term One is spent socializing the students into the culture of mainstream schooling. Students often start Wiltja with the habits and behaviours of community but these are progressively changed so that the students are able to behave in ways appropriate to mainstream schooling. Two teachers operate this class and both are primary-trained as much of the learning in this class covers outcomes from the primary years of schooling. Many of the fundamental mathematics concepts (such as place value, basic operations, and number facts) are built into this program. However, as an expressed interest from the PYEC, there is also an emphasis on time and money as these are seen as key areas for the students to learn and apply in community.

As the literacy and numeracy levels are frequently very low for this group, the use of standardized tests is not appropriate. The school has developed its own tests to assess students throughout their time in this classroom. Literacy, numeracy and other curriculum areas are all taught in this class. Along with the two teachers, an AEW (Anangu Education Worker) and other support people work in this class. Teachers co-teach and work with students at different levels. Activities are often hands-on when new material is being introduced and then they move to written work.

When the students have reached a level that is deemed to be acceptable, both socially and academically, they are able to move into Year 8 where they are placed in mainstream mathematics classes. Here their Wiltja teacher will be in the class supporting the students. Students also have another line of mathematics that is conducted in the Wiltja classroom. This Wiltja mathematics is aimed at building basic mathematics concepts while mainstream lessons expose them to the mathematics of the national curriculum.

In the senior years, the students transition to another site, a vocational education college. Here they are mainstreamed and pathways (in line with SACE) are developed. Here they attend a mix of mainstream and Wiltja delivered classes aimed at completion of the SACE certificate. They also participate in a VET (Vocational Education and Training) Pathway program that involves one full day of training each week in a nationally accredited, competency-based training program. These pathways have their own mathematics components. For example, the Building and Construction Certificate II has units in basic estimation, carrying out measurements and calculations and reading and interpreting plans and specifications. Students are increasingly undertaking mathematics in Stage 1 and Stage 2, vocational strands of mathematics. Students undertake Mathematics at one of three levels at Stage 1 – Numeracy for Work and Community Life, Mathematics Pathways and Mathematics Applications. One student has now commenced ATAR level mathematics by undertaking Maths Applications. These students attend mainstream mathematics classes but with extra support available. For example, the Maths Applications student has a tutor to support her, as there are still some gaps in her background understandings. The tutor helps to work through these gaps rather than allowing the student to feel lost and possibly give up.
Support

Support for the students as they learn maths and transition into mainstream classes is very strong and reactive to the needs of the learners. For example, in one mainstream class, the teacher introduced a new investigation but the Wiltja teacher realized that both the literacy demands and the mathematics involved were too demanding for her students. She withdrew the students, taking them back to the Wiltja classroom, and progressively took the students through the task, deconstructing the text and scaffolding the numeracy demands so that they could access the mathematical processes needed for successful completion of the investigation. Without this level of support, it was seen to be unlikely that the students would have been able to access the task. Through the careful scaffolding of the investigation, the students were able to do their work in ways that were supported and meaningful.

The role of Wiltja teachers encompasses a number of key tasks - identifying curriculum needs and problems, assessing student understanding and capabilities, advocating on the students’ behalf, deconstructing and scaffolding tasks and providing explicit instruction. This feeds back into the development of a more relevant curriculum.

A further level of support is offered through the employment of Anangu Education Workers (AEWs). Not only does this role entail supporting the teachers to manage behavior by recognizing when students might be misbehaving in their home language – such as swearing or teasing – and be able to address issues before they intensify, but also to offer strong support in explaining concepts to children in their home language.

Graded Worksheets

In most of the classes, teachers use worksheets. These are carefully selected and contingent on the programs being used (e.g. Direct Instruction or Jump into Maths). The worksheets are selected so that students are familiar with the work and, importantly, experience success. The worksheets are not time fillers but differentiated to the needs of the learners. At any one time, every student in a class could be working on different worksheets specifically selected to meet their needs. These tasks are also graded so that as students progress through the work, they experienced early success before encountering new materials. Building success and revising concepts are central to the early parts of the worksheets, while introducing new materials that could challenge the students are an important part of the later activities.

In the classrooms where models similar to direct instruction are used, the teachers work closely with the students. When students complete various tasks within the worksheet, they call the teacher over. At this point the teacher checks student responses, identifies areas of need or strength and either praises the students or works to remedy any misconceptions/problems evident. This approach is very individualized and based on the needs of the learner.
<table>
<thead>
<tr>
<th>Principle</th>
<th>Strategy</th>
<th>Mathematics</th>
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</thead>
<tbody>
<tr>
<td>Governance by Group from APY lands</td>
<td>Education is school business, culture is community business</td>
<td>• Focus on basic numeracy, time, money</td>
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<tr>
<td>High expectations</td>
<td>Shifting from deficit models to enactive models of learners and learning</td>
<td>• Enabling students to undertake Stage 1 and Stage 2 mathematics in SACE rather than keep them locked into low level numeracy</td>
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<tr>
<td>Differentiating learning</td>
<td>Tailored support for diversity among learners</td>
<td>• Use of programs that have differentiated resources</td>
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<tr>
<td></td>
<td></td>
<td>• Assessment of students to identify their areas of mathematical need</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Supporting students individually with strong scaffolding in order to build mathematical understandings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Use of worksheets that are specifically tailored for each individual student.</td>
</tr>
<tr>
<td>Walk in both worlds</td>
<td>Boarding facility and extra-curricular activities create links to activities beyond school</td>
<td>• Participating in activities that connect mathematics to real-life activities so that there is a relevance and purpose to mathematics</td>
</tr>
<tr>
<td></td>
<td>Integration into mainstream schooling</td>
<td>• Supported learning in mainstream mathematics; scaffolded learning in Wiltja mathematics to enable success in mainstream classrooms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Focused activities on building blocks, big ideas, skills in Wiltja classes</td>
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</tbody>
</table>
| | | • Double the number of lessons in Year 7 and 8 for mathematics.
Worksheets are not used for “busy” work or just to consolidate aspects of teaching. They are used with specific intent. First, they build a sense of success and confidence. Second, they are carefully selected to meet the needs of individual learners so a number of different handouts may be used at any point in a lesson depending on individuals’ needs. The students are not expected to work through the worksheet alone, but rather in a progressive mode that is directed by the teacher. This ensures that students are aware of the demands of a particular question so that they can successfully manoeuvre through the worksheet.

Scaffolding learning in mathematics is about creating the core building blocks of mathematics that are often absent when students commence at Wiltja. It is recognized that the context and culture of Anangu learners means that there is often a cultural and linguistic difference between school and home so attention is focused on building these primary, foundational skills so that they are able to participate in mainstream schooling.

There is a considerable amount of effort required to shift students from the rowdy behavior that is frequently evident in community schools, particularly for adolescent learners (and those who may have undertaken men/women’s business and are considered adult). A significant shift in behavior is needed for the students to become enculturated into mainstream schooling. Much of boarding and school is about the socialization of students into formal schooling.

Wiltja teachers spend a lot of time ensuring the students are heavily scaffolded in the general study and time management skills, as well as being positively involved in students learning by providing monitoring, emotional support and encouragement.

Supporting learning in mainstream curriculum and pedagogy helps to build success. Students are able to learn mathematics as per the national curriculum, but with the support of their teachers to enable students to engage successfully with content.
Key Messages for Numeracy Learning

As the context of this case study is one where remote students are being enculturated into the dominant culture in a deliberate and intentional way at the direction of the Anangu people, there are some differences that are possible in this context compared to remote settings.

- Students are prepared to work both socially and mathematically in mainstream classrooms. Learning to be a mathematician is as much about the social aspects of behavior in classrooms as it is about the mathematics;
- Teachers have genuinely high expectations of students and are recognizing that they are capable of higher levels of mathematics rather than restricting learning to basic skills, effectively locking them into low levels of mathematics. Students here are able to engage with complex mathematical ideas. For example, at the time of this case study, the students in Year 10 are undertaking studies in trigonometry in their mainstream classroom. Students in the senior years are now undertaking mathematics subjects in SACE outside the core numeracy strand and are succeeding.

- Students need good support to enable transitions into mainstream mathematics – teachers and AEWs initially offer very high levels of support and as students become more embedded in mainstream learning, then scaffolding is used to develop independence. The initial support is to build familiarity with mathematical ideas and to build automaticity with some of the basic concepts (such as operations, number facts);
- Teachers spend a lot of time ensuring the students are heavily scaffolded in their general study and time management skills, as well as being positively involved in students’ learning by providing monitoring, emotional support and encouragement. This focus on other aspects of study and life skills flows over to the learning in numeracy;
- Providing resources that are targeted to meet the needs of the learner help to support learning in mathematics;
- Successful numeracy learning is cultural, linguistic and mathematic so teachers need to scaffold across all three domains of learning. AEWs are invaluable in transitioning much of the cultural and linguistic aspects of learning, particularly in terms of negotiating meaning through the use of home language.

School demographics

<table>
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<tbody>
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<td>Total enrolments</td>
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<tr>
<td>Non-teaching staff</td>
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<tr>
<td>Indigenous students %</td>
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<tr>
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<td>Year 12</td>
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