

## Mathematics & Science Structure 2018

From 2018 onwards, the maths and science faculties will discontinue the current “level” based streaming and move towards mixed ability classes across all year levels. We will like to retain the ACE Program in years 8 – 10 only, and also offer a Support/Intervention class for those students who have large gaps in their knowledge. Detailed information is outlined below for each year level.

All students will be exposed to inquiry based learning throughout their time at Melrose High School. Each semester they will complete an assignment that centres on 21<sup>st</sup> century fluencies and creates vital links between the concepts taught, real-life applications and the individual interests and passions of each student.

In Maths, we will also incorporate the use of Mathspace into each of our classes. This online tool will allow teachers to individualise work for students, as well as providing students with multiple problem solving methods and instructional demonstrations to complement the topics covered in class. It will also replace the need for a textbook, and allow students to access their Maths homework and resources from any device with internet access. Students will need to bring a device to class every day, as per the schools BYOD policy. Use of this software will not replace teacher instruction and demonstration, the need for hand-writing in class, or paper-based activities. It will be used as an additional resource to complement the topics covered in class and allow students greater accessibility to relevant material.

### Year 7

All students will be placed in mixed ability classes for the entire year. This will create greater flexibility within classes, allowing for class changes and a more even distribution of students among the assigned teachers. Currently, students all complete the same assessment tasks, and this will continue in 2018. Each task set, whether formative or summative, will have an extension component to allow students to demonstrate the depth of their understanding and problem solving skills. Tasks will also be personalised for those students who need more support. This will also allow staff to make well informed decisions about those students who may be eligible for the ACE Program in Year 8 and those students who may require additional intervention or support.

A support class will be offered for students who require it. This will be a short-term class change (maximum 1 semester unless otherwise negotiated) so that students can build up their basic skills to a level that will allow them to access the mainstream curriculum.

In the main, students will remain in the same class group for both Maths and Science throughout year 7, allowing them to build cohesive working relationships as a class group and facilitating cross-curriculum links between these areas.

### Year 8

The majority of students will be placed in mixed ability classes. As per the year 7 structure, this will create greater flexibility within classes, allowing for class changes and a more even distribution of students among the assigned teachers. Currently, students all complete the same assessment tasks, and this will continue in 2018. Each task set, whether formative or summative, will have an

extension component to allow students to demonstrate the depth of their understanding and problem solving skills. Tasks will also be personalised for those students who need more support.

A select group of identified students will be eligible for the Year 8 ACE Program in either Maths or Science, or both. This program will cover the same learning outcomes as the mainstream classes, but it will also allow for greater extension and creative exploration of these outcomes. Students in this class will be expected to work at a high level, be independent learners and have a passion for mathematics and/or Science. They will be exposed to more complex concepts, and afforded the opportunity to undertake more research focussed assignments that centre on higher order thinking and analysis skills. There will also be opportunities for students in this class to participate in specialist competitions and excursions throughout the year. Students will be offered a place in this class based on their performance in Year 7 across both semesters 1 and 2. Students will remain in this class for at least 1 semester, but there will be an option to move to a mainstream class at the end of each semester. Likewise, there will be an option for mainstream students to move into the ACE program at the beginning of each semester.

In contrast to this, a support class will be offered for students who require it. This will be a short-term class change (maximum 1 semester unless otherwise negotiated) so that students can build up their basic skills to a level that will allow them to access the mainstream curriculum.

## Year 9

The majority of students will be placed in mixed ability classes. As per the year 8 structure, this will create greater flexibility within classes, allowing for class changes and a more even distribution of students among the assigned teachers. Currently, students all complete the same assessment tasks, and this will continue in 2018. Each task set, whether formative or summative, will have an extension component to allow students to demonstrate the depth of their understanding and problem solving skills. Tasks will also be personalised for those students who need more support.

A select group of identified students will be eligible for the Year 9 ACE Program in either Maths or Science, or both. This program will cover the same learning outcomes as the mainstream classes, but it will also allow for greater extension and creative exploration of these outcomes. Students in this class will be expected to work at a high level, be independent learners and have a passion for mathematics and/or science. They will be exposed to more complex concepts, and afforded the opportunity to undertake more research focussed assignments that centre on higher order thinking and analysis skills. There will also be opportunities for students in this class to participate in specialist competitions and excursions throughout the year. Students will be offered a place in this class based on their performance in Year 7 and 8 across all semesters. Students will remain in this class for at least 1 semester, but there will be an option to move to a mainstream class at the end of each semester. Likewise, there will be an option for mainstream students to move into the ACE program at the beginning of each semester.

In contrast to this, a support class will be offered for students who require it. This will be a short-term class change (maximum 1 semester unless otherwise negotiated) so that students can build up their basic skills to a level that will allow them to access the mainstream curriculum.

## Year 10

### *Mathematics*

We are in a position to offer two separate curricula to Year 10 students, the Year 10 Australian Curriculum and the Year 10 Advanced Australian Curriculum. Students will be placed in the appropriate level based on their academic achievement across Years 7 to 9 and their prospective Mathematics elective in College.

Students studying the Year 10 Advanced Curriculum (Year 10 ACE) will be exposed to the mathematics required for those planning to undertake Mathematical Methods or Specialist Mathematics at College. The assessment structure in these classes will be very similar to the assessment structure students can expect to find at College, and should prepare them fully for participation in these higher level mathematics courses. A flipped classroom may also be offered, ensuring that all students are independent learners with sound study habits and research skills that will stand to them in their future studies.

Students studying the Year 10 Curriculum will be exposed to the concepts and techniques required for those planning to undertake Mathematical Applications or Essential Mathematics at College. The assessment structure in these classes will be very similar to the assessment structure students can expect to find at College, and should prepare them fully for participation in these mathematics courses.

In keeping with all other year levels, a numeracy support class will be offered for students who require it. This will be a short-term class change (maximum 1 semester unless otherwise negotiated) so that students can build up their basic skills to a level that will allow them to access the mainstream curriculum.

### *Science*

The majority of students will be placed in mixed ability classes. As per the year 9 structure, this will create greater flexibility within classes, allowing for class changes and a more even distribution of students among the assigned teachers. Currently, students all complete the same assessment tasks, and this will continue in 2018.

A select group of identified students will be eligible for the Year 10 ACE Program. This program will cover the same learning outcomes as the mainstream classes, but it will also allow for greater extension and creative exploration of these outcomes. Students in this class will be expected to work at a high level, be independent learners and have a passion for science. They will be exposed to more complex concepts, and afforded the opportunity to undertake more research focussed assignments that centre on higher order thinking and analysis skills. Students will be offered a place in this class based on their performance in Year 7, 8 and 9 across all semesters. Students will remain in this class for at least 1 semester, but there will be an option to move to a mainstream class at the end of each semester. Likewise, there will be an option for mainstream students to move into the ACE program at the beginning of each semester.

In contrast to this, a support class will be offered for students who require it. This will be a short-term class change (maximum 1 semester unless otherwise negotiated) so that students can build up their basic skills to a level that will allow them to access the mainstream curriculum.