

## STUDENT ACCESS TO COMPUTER TECHNOLOGY

### All Wavell students enjoy "one to one" computer access.

- Year 7-10 students may bring their own device and join the BYOx program, however, in-class access to computers is also available.
- A range of learning technology is used within classrooms, from computer laboratories, classroom laptops, specialist graphic computers, computer based film editing suites to computer linked sewing machines.
- The school has a wireless infrastructure which is fully operational across the campus.
- Wavell operates through the Education Queensland system which provides a secure, filtered network.
- Students are able to access their Education Queensland mailbox and e-learning from the Learning Place at home.

• The school's network operates with clear guidelines and students must sign a school agreement before they are granted user privileges. The school has zero tolerance to inappropriate use of the school computer system and network. In some instances network privileges may be revoked.

• Cyber safety is reinforced both by classroom practices and through the provision of presentations for students, parents and staff.

• Our Head of Learning Technology and our team of Computer Technicians provide prompt technical assistance to our learning community and ensures that our resources are routinely upgraded.

**The BYOx programme is mandatory for Year 11 and 12 students. Year 11 and 12 students are to bring their own device for use in their classes.**



### PROBLEM SOLVING DAYS

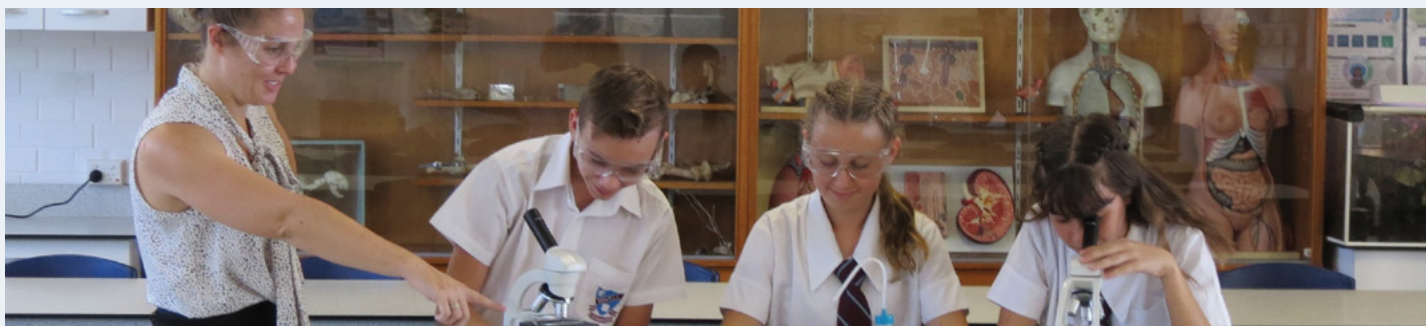
Each year, Wavell organises and hosts two challenge days aimed at gifted and talented students across Brisbane North. The Junior Secondary Problem Solving Challenge focuses on Mathematics, Science and Technology, whilst the Literacy Olympics features activities based on Literacy in English, Social Science and The Arts.

Wavell enters teams in both events and utilises senior students as judges on both days. These events are attended by up to 25 schools and 400 students from Years 5 - 8.

### ROBOTICS CLUB

Students can participate in a Coding Foundations for Game Development course using Python run by Junior Engineers (an outside organisation). This course runs one afternoon a week and covers advanced computer science and software programming commands.

The voluntary Robotics Club runs during lunch time once a week and allows students to develop skills in problem solving and team work. Students program Lego Mindstorms EV3 Robots to complete a variety of challenges.



### ENROLMENT INFORMATION

**Please visit our website: [www.wavellshs.eq.edu.au](http://www.wavellshs.eq.edu.au) for an application form.**

Your application will then be considered according to our school's Enrolment Policy.

For further information or enquiries regarding enrolment, please contact our Enrolment Officer on 3350 0328.

# INTRODUCING STEM

## THE WAVELL WAY



### SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM)

STEM touches every aspect of our lives, from our laptops to the technologies that enable us to explore the world around us and outer space. It is a very important part of our fast changing and increasingly global economy. To be a successful 21st Century citizen, the students of today need a good grounding in STEM subjects. This may provide them with a career direction and enable them to operate as citizens who are aware of the benefits and concerns that are raised by the application of technology.

As a large secondary school, Wavell is able to offer a wide diversity of STEM subjects in both the Junior and Senior school. In Years 7 and 8 all students study Mathematics and Science and undertake a variety of STEM electives, including Business and Information Technology, as well as Design and Technology. In Years 9 and 10, Mathematics and Science continue to be studied by all, with senior students able to select their specific area of interest.

In Years 11 and 12, students may select an academic pathway with General Mathematics, Mathematical Methods or Specialist Mathematics, Biology, Chemistry, Physics, Earth and Environmental Science, Engineering, Design and Digital Solutions, as they consider university. Vocational Education and Training (VET) includes a selection of Horticulture, Allied Health Assisting, Technology and Mathematics in the VET pathway. STEM opportunities: UQ STEM Ambassadors, QUT STEM Internships, QMEA Years 11 & 12 Awards (STEM) and Year 10 STEM Unearthed.

At Wavell, 75% of university eligible students undertake at least one STEM subject in addition to Mathematics. Around 60% of students who are offered a place in a study course through QTAC go on to study a course with significant STEM involvement.



*"A 21st Century educational system must focus on the areas where humans can outclass computers – such as cognitive skills, interpersonal skills, fine motor skills, or sophisticated coding skills."*

Christine Lagarde,  
Managing Director,  
International Monetary Fund.

### KEY STAFF



At Wavell an important point of contact for information about what is happening in a subject is the Head of Department.

The STEM Head of Department contact numbers are:

<b>Business and ICT:</b>	3350 0363
<b>Industrial Design and Technology:</b>	3350 0319
<b>Information Technology:</b>	3350 0365
<b>Junior Secondary &amp; Advanced Academic Program:</b>	3350 0376
<b>Mathematics:</b>	3350 0367
<b>Science and QMEA:</b>	3350 0364



## SCIENCE

Science at Wavell offers a program based on the Australian Curriculum. During the year we undertake a unit of work each term in the four disciplines: Biology, Chemistry, Earth Science and Physics.

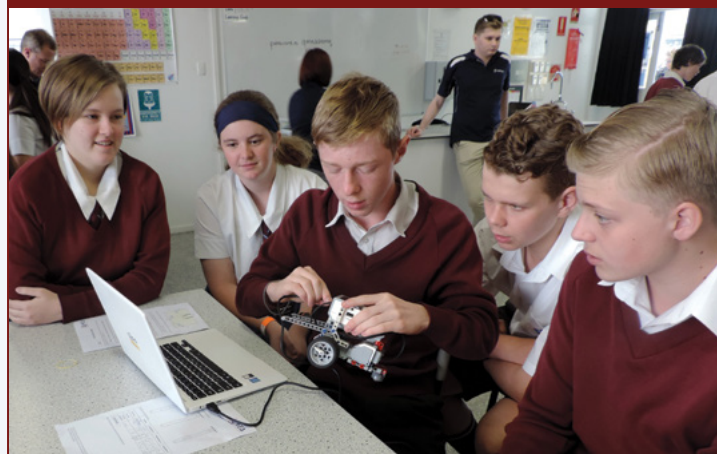
Assessment consists of three assessment tasks per semester. This includes a student experiment report, research task and exam.

*"I like Science because it is a great way to explore the world around me, as well as learn an enormous amount everyday. The experiments are always fun and the teachers are great at explaining."*

**Lani**

	YEAR 7	YEAR 8	YEAR 9
TERM 1	Investigating water	Using the particle theory	Specific Heat and Turtles
TERM 2	Making a leaf collection	Recycling mobile phones	Looking at earthquake damage
TERM 3	Investigating forces on a copter	Energy	Investigating acids and bases
TERM 4	Seasoning	Plants	Ecology

## MATHEMATICS



At Wavell, Mathematics in Years 7, 8 and 9 is delivered across three challenge levels: Extension, Core and Foundation. Students who are high achievers in Mathematics populate the Extension classes; students who can perform solidly in Mathematics, but need some support, are in Core classes and those who require extensive numeracy assistance make up the Foundation classes. Throughout the year, students are able to move between levels according to their standards of achievement.

Strands of Mathematics studied include Number, Space, Geometry, Probability, Statistics and Algebra. Assessment involves at least two exams each semester plus an assignment. Assignments can take the form of an oral presentation, written report or extended investigation.

*"I enjoy Maths because it is helpful, fun and entertaining. It helps you fulfil all of your dreams in almost every job or just in everyday life."*

**Alexis**

## ADVANCED ACADEMIC PROGRAM (AAP)

The Advanced Academic Program (AAP) is designed to stimulate and challenge academically minded students through integrated studies from learning areas of English, Social Science, Mathematics and Science. The course aims to foster a wide-ranging love of learning and to develop skills in research, analysis and presentation of information. Students who participate in this program should acquire an enhanced preparation for senior academic subjects across the curriculum.

AAP is organised into units that link with the Australian Curriculum core subject units. Learnings addressed may change each year, reflecting the interests and needs of students, together with the teacher strengths. Entry to this program is by invitation only, based on student's results in core subject areas, and teacher recommendations, from Years 7 and 8.

*"I believe that Science, Technology and Design are good subjects to study because of the experiments you do and because you can be creative and learn more."*

**Connor**



## BUSINESS AND DIGITAL TECHNOLOGIES

Business and Digital Technologies students' work individually and collaboratively to design, create and evaluate digital solutions for everyday needs. Students will develop problem solving and computing skills to create digital products such as websites, interactive games and stories, spreadsheets and computer animation using coding.

YEARS 7 AND 8

Entrepreneurship  
Scratch (Coding)  
Animation / Games

YEARS 9 AND 10

Web design  
Game design  
Python Programming  
Robotics  
Database  
Animation

*"I really enjoy the STEM program because we learn about new things everyday. This program can boost confidence and help you achieve life goals."*

**Ben**

## INDUSTRIAL TECHNOLOGY AND DESIGN

Industrial Technology and Design nurtures self-reliance in future citizens through the participation in relevant educational curriculum. The curriculum scope of Industrial Technology and Design amalgamates learning from scientific, theoretical and practical foci. Students successfully graduating from an Industrial Technology and Design curriculum have developed a broad range of knowledge and skills in design thinking, higher order thinking, ICT competencies and varied practical aptitudes.

A design approach is used by Industrial Technology and Design students through Years 7, 8, 9 and 10 to determine design proposals to given problems.

Our Trade Skills Centre has enhanced opportunities for Year 11 and 12 students to implement manufacturing and production skills, graphical communication and a basic understanding of material science in the Engineering subject. The Trade Skills Centre is also utilised by Year 11 and 12 students studying a vocational pathway: Furnishing, Industrial Technology Skills and Certificate II in Engineering (Pathways).



## QUEENSLAND MINERALS AND ENERGY ACADEMY (QMEA)



The Queensland Minerals and Energy Academy (QMEA) is a partnership which gives partner schools access to the Minerals and Energy sector. Selected Year 7 students participate in "Clean Water for All" and selected students in Year 8 take part in "Energy for the Future" where they design a future energy mix for an allocated country following on from briefing sessions, from experts, on different energy generation sources.

Selected students in Year 9 participate in the program "Beakers, Bots, Build" where they have to undertake a variety of Science and Robotics challenges. Further opportunities are available for students in Year 10 in both the Academic and Trade streams. In Years 11 and 12, a variety of opportunities are on offer - camps for both Academic and Trade stream students lead to the ability to gain scholarships and work experience post school. These camps build on classroom experiences in STEM subjects.

*The students pictured participated in an Engineering Experience at Mount Isa.*