



BE A STEM LEADER

Invest in Design and Technologies Years 4-5-6



Bands 5-6-7 schools across Queensland can deliver the Australian Curriculum: Technologies to Years 4-5-6 students in 2020 through a collaboration with the Department of Education's [IMPACT Centre](#).

We deliver curriculum and assess and report on student learning

Our highly skilled team provide a full service to your school. They teach, assess and report on the Technologies Learning Area as prescribed by the Australian Curriculum, QCAA and Department of Education.

Register for one or both subjects

- **Digital Technologies** is available in Semester 2, 2020 – [view outline](#).
- **Design and Technologies** is available in Semester 2, 2020 – as outlined in this document.
 - Participation in this subject actively engages students in creating quality designed solutions for identified needs and opportunities across a range of technologies contexts.
 - Students manage projects independently and collaboratively from conception to realisation.
 - They apply design and systems thinking and design processes to investigate ideas, generate and refine ideas, plan, produce and evaluate designed solutions.

Expand your expert teaching team



John, Katie and Andrew are examples of the specialist teachers available to your school

- Specialist teachers from the IMPACT Centre become part of your expert teaching team.
- Instead of walking through the classroom door, they login to work directly with your students and staff.
- They collaborate with you and your team to coordinate student involvement and share best practice.
- They create meaningful online communities to connect students, educators and industry experts.

Curriculum summary

Content Descriptors: Design and Technologies Years 3-4

Knowledge and Understanding

- Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs ([ACTDEK010](#))
- Investigate how forces and the properties of materials affect the behaviour of a product or system ([ACTDEK011](#))
- Investigate food and fibre production and food technologies used in modern and traditional societies ([ACTDEK012](#))
- Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes ([ACTDEK013](#))

Processes and Productions Skills

- Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to produce designed solutions ([ACTDEP014](#))
- Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques ([ACTDEP015](#))
- Select and use materials, components, tools, equipment and techniques and use safe work practices to make designed solutions ([ACTDEP016](#))
- Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment ([ACTDEP017](#))
- Plan a sequence of production steps when making designed solutions individually and collaboratively ([ACTDEP018](#))

Content Descriptors: Design and Technologies Years 5-6

Knowledge and Understanding

- Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use ([ACTDEK019](#))
- Investigate how electrical energy can control movement, sound or light in a designed product or system ([ACTDEK020](#))
- Investigate how and why food and fibre are produced in managed environments and prepared to enable people to grow and be healthy ([ACTDEK021](#))
- Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use ([ACTDEK023](#))

Processes and Productions Skills

- Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended designed solutions ([ACTDEP024](#))
- Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques ([ACTDEP025](#))
- Select appropriate materials, components, tools, equipment and techniques and apply safe procedures to make designed solutions ([ACTDEP026](#))
- Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions ([ACTDEP027](#))
- Develop project plans that include consideration of resources when making designed solutions individually and collaboratively ([ACTDEP028](#))

Assessment and reporting

Students are assessed against the achievement standards from the Australian Curriculum.

- Students demonstrate learning through a variety of activities.
- Student work is marked on an A-E scale.
- Timely verbal and written feedback is given to students with regular updates sent to schools.

Schools receive:

- i. an interim check-in report describing student achievement and effort during the semester.
- ii. attendance data for the semester and access to digital examples of student work.
- iii. end of semester report including:
 - A-E grade for achievement and effort.
 - written report card comment reflecting student achievement and effort.

NB: Report card details will be emailed to your school. Your staff will need to copy and paste this information into OneSchool (we will not have access to OneSchool at your site). You can edit the report details if required.

Subject Lesson Content

Wk	Year 4	Year 5	Year 6
1	Introduction to Technologies <ul style="list-style-type: none"> Using tools & elearn Design Process & Thinking 	Introduction to Technologies <ul style="list-style-type: none"> Using tools & elearn Design Process & Thinking 	Introduction to Technologies <ul style="list-style-type: none"> Using tools & elearn Design Process & Thinking
2	Evaluate <ul style="list-style-type: none"> Quiz Epic Design Fails - Evaluate 	Evaluate <ul style="list-style-type: none"> Quiz Epic Design Fails - Evaluate 	Evaluate <ul style="list-style-type: none"> Quiz Epic Design Fails - Evaluate
3	Evaluate & Generate <ul style="list-style-type: none"> Classroom furniture designs Collaborative design challenge 	Evaluate & Generate <ul style="list-style-type: none"> Evaluating prototypes Collaborative challenge 	Evaluate & Generate <ul style="list-style-type: none"> Evaluating prototypes Collaborative challenge
4	Check in <ul style="list-style-type: none"> Evaluating Prototypes Generate: Redesign your classroom 	Check in <ul style="list-style-type: none"> Role of people in design (Dyson) Generate: Appliance design 	Check in <ul style="list-style-type: none"> Timeline design Generate: Improvements to designs
5	Investigate <ul style="list-style-type: none"> Role of people in design (Da Vinci) Materials in design 	Investigate <ul style="list-style-type: none"> Production cycle Environment 	Investigate <ul style="list-style-type: none"> People and processes Famous designs
6	Generate <ul style="list-style-type: none"> Entrepreneurs Graphical representations (fibre) 	Generate <ul style="list-style-type: none"> Graphical representations Elements of design 	Generate <ul style="list-style-type: none"> Elements of design Logos, symbols and marketing
7	Evaluate & Generate <ul style="list-style-type: none"> Environment designs Collaborative design challenge 	Evaluate & Generate <ul style="list-style-type: none"> Environment designs Collaborative design challenge 	Evaluate & Generate <ul style="list-style-type: none"> Environment designs Collaborative design challenge
8	Check in <ul style="list-style-type: none"> Aesthetics in design Generate: House design 	Check in <ul style="list-style-type: none"> Materials in design Generate: Bicycle Challenge 	Check in <ul style="list-style-type: none"> Sustainability in design Generate: Solutions to design
9	Scratch Introduction <ul style="list-style-type: none"> Overview and exploring Scratch Scratch fundamentals Scratch account creation 	Scratch Introduction <ul style="list-style-type: none"> Overview and exploring Scratch Scratch fundamentals Scratch account creation 	Scratch Introduction <ul style="list-style-type: none"> Overview and exploring Blockly Blockly fundamentals Blockly account creation
10	Design Brief Challenge <ul style="list-style-type: none"> How to solve a design problem Scratch games evaluation Success criteria in action 	Design Brief Challenge <ul style="list-style-type: none"> How to solve a design problem Scratch games evaluation Writing success criteria 	Design Brief Challenge <ul style="list-style-type: none"> How to solve a design problem Blockly games evaluation Writing success criteria
11	Portfolio: Investigate <ul style="list-style-type: none"> Design Brief – the scenario Design Challenge: game controller Research and decision making 	Portfolio: Investigate <ul style="list-style-type: none"> Design Brief – the scenario Design challenge: interactive tourism map – Hughenden Dinosaurs/ tourism Qld Research and decision making 	Portfolio: Investigate <ul style="list-style-type: none"> Design Brief – the scenario Design challenge: interactive gaming design challenge, Research and decision making
12	Portfolio: Generate <ul style="list-style-type: none"> Design Brief – review ideas Ideate other designs 	Portfolio: Generate <ul style="list-style-type: none"> Design Brief – review ideas Ideate other designs 	Portfolio: Generate <ul style="list-style-type: none"> Design Brief – review ideas Ideate other designs
13	Portfolio: Produce <ul style="list-style-type: none"> Design Brief –prototype using electronic kits and Scratch Test designs 	Portfolio: Produce <ul style="list-style-type: none"> Design Brief – prototype using electronic kits and Scratch Test designs 	Portfolio: Produce <ul style="list-style-type: none"> Design Brief – prototype using electronics kits and coding Test designs
14	Portfolio: Produce <ul style="list-style-type: none"> Design Brief –prototype using electronic kits and Scratch Test designs 	Portfolio: Produce <ul style="list-style-type: none"> Design Brief – prototype using electronic kits and Scratch Test designs 	Portfolio: Produce <ul style="list-style-type: none"> Design Brief – prototype using electronics kits and coding Test designs
15	Portfolio: Evaluating <ul style="list-style-type: none"> Evaluate designs Control and input examination Success criteria 	Portfolio: Evaluating <ul style="list-style-type: none"> Evaluate designs Control and input examination Success criteria 	Portfolio: Evaluating <ul style="list-style-type: none"> Evaluate designs Control and input examination Success criteria
16	Refine <ul style="list-style-type: none"> Extension of ideas Alternative input design for map 	Refine <ul style="list-style-type: none"> Extension of ideas Alternative input design for map 	Refine <ul style="list-style-type: none"> Extension of ideas Alternative input design for map
17	Collaborate/ Present <ul style="list-style-type: none"> Collaboration and sharing Final review 	Collaborate/ Present <ul style="list-style-type: none"> Collaboration and sharing Final review 	Collaborate/ Present <ul style="list-style-type: none"> Collaboration and sharing Final review
18	Conclusion <ul style="list-style-type: none"> The future for design Real world design problems 	Conclusion <ul style="list-style-type: none"> The future for design Real world design problems 	Conclusion <ul style="list-style-type: none"> The future for design Real world design problems

Format

Year 4 – Semester 2, 2020

- 1 x 60 minute web conference lesson each week delivered to a group of 15-20 students.
- 18 x web conference lessons per semester (9 per term).
- Optional independent online activities are available each week - completed at a time that suits the school schedule.
- We ensure that students complete 20 hours of Design and Technologies activities, which is half of the 40 hours [recommended time allocation](#) per year for Year 4 Technologies (the other half is [Digital Technologies](#)).

Year 5 – Semester 2, 2020

- 1 x 60 minute web conference lesson each week delivered to a group of 15-20 students.
- 18 lessons per semester, 9 lessons per term.
- 1 x 30 minute set of independent online activities each week - available in an eLearn online classroom, completed at a time that suits the school schedule – teacher/teacher-aide support recommended.
- We ensure that students complete 30 hours of Design and Technologies activities, which is half of the 60 hours [recommended time allocation](#) per year for Year 5 Technologies (the other half is [Digital Technologies](#)).

Year 6 – Semester 2, 2020

- 1 x 60 minute web conference lesson each week delivered to a group of 15-20 students.
- 18 lessons per semester, 9 lessons per term.
- 1 x 30 minute set of independent online activities each week - available in an eLearn online classroom, completed at a time that suits the school schedule – teacher/teacher-aide support recommended.
- We ensure that students complete 30 hours of Design and Technologies activities, which is half of the 60 hours [recommended time allocation](#) per year for Year 6 Technologies (the other half is [Digital Technologies](#)).

Grouping models and bandwidth

Model 1: Your years 4-5-6 students login at the same time each week, and work separately with the appropriate group e.g. every Monday 12:00pm your Year 4 students work with John, Year 5 students with Katie, Year 6 students with Andrew,

Model 2: Your years 4-5-6 students login at different times across the week e.g. Year 4s on a Monday, Year 5s on a Tuesday, Year 6s on a Friday – depending on availability of timeslots.

Your online group of 15-20 students may consist of students from your school only, or from multiple small schools.

Your school's [bandwidth](#) determines how many students from your school can login and successfully participate at one time. Contact us to organise a 20-30 minute test session which will help you decide if Model 1 or 2 is most suitable.

Timetabling

We will publish timeslots for you to book into. The following timeslots are [examples only](#) – you can involve Years 4-5-6 in one of these sessions or spread student involvement across the week:

Monday 12:00pm – 1:00pm

Tuesday 1:30pm – 2:30pm

Friday 12:00pm – 1:00pm

Equipment and Supervision

To successfully participate, each student requires:

- their own PC or Mac computer (desktop or laptop – PC or Mac – but not an iPad)
- reliable internet access (blue cord connection is preferable to wireless);
- a noise cancelling headset with microphone (approx. \$30-\$50 each);
- a suitable learning venue e.g. classroom computer, library area, or school computer lab/pod;
- supervisory support from a principal, teacher, teacher-aide or volunteer parent, e.g. help students to login and get started on time, regularly communicate with our online teacher.

Why is there a cost?

- There is a cost for all school staffing.
 - Your HR structure and staffing allocations are based on the number of enrolments at your school.
 - In addition, most schools invest in specialist staff as part of their improvement agenda – using FTE or cash budgets to fund targeted leadership, coaching, teacher and teacher-aide roles.
 - In a similar way, your school can invest in specialist staff from the IMPACT Centre.
 - Our highly teachers can join your expert teaching team.



John, Katie and Andrew are examples of the specialist teachers available to your school

Cost-recovery model

- The IMPACT Centre operates on a cost-recovery model, with salaries and operational costs fully-funded by investing schools.
- As background, Department of Education leaders asked us to create a school-funded model so that each school can match its improvement agenda to our initiatives and invest accordingly.

Option 1: Invest FTE

- To invest FTE, simply transfer a small fraction of FTE to the IMPACT Centre via School Budgeting Solution (SBS).
- Estimate your student numbers for now, then we will confirm the exact FTE fraction with you in February, 2020. You will be charged for *actual numbers*.
- Call us on 3634 1888 and we will work out your estimated FTE fraction together.

Option 2: Invest cash

- To invest cash, simply budget for the amount and we invoice your school during the program.
- Estimate your student numbers for now, then we will send your school an invoice once actual numbers can be confirmed in February, 2020. You will be charged for *actual numbers*.
- Many schools use funds from [Investing for Success \(I4S\)](#), [RREAP](#), [Advancing STEM in primary schools](#) or internal budget allocations.
- Some schools offer parents or community organisations the opportunity to partially or fully contribute.
- The cash costs are:
 - \$495 per student per subject (either Digital Technologies **or** Design and Technologies)
 - \$990 per student for both subjects in Semester 2 (Digital Technologies **and** Design and Technologies)

Additional costs

- Each participating student must use a headset with microphone (\$30-\$50 per headset).

NB: We supply each student with an electronics kit, posted to your school. This is included in the price of \$495 per student and the prices listed on the next page – no extra charge.

Participation costs

No. of Students	Semester 2 Digital Technologies	Semester 2 Design and Technologies	Semester 2 Both subjects
1 student	\$495 or 0.01 FTE for Sem 1 or 2	\$495 or 0.01 FTE for Semester 2	\$990 or 0.02 FTE for Semester 2
2 students	\$990 or 0.02 FTE for Semester 2	\$990 or 0.02 FTE for Semester 2	\$1980 or 0.04 FTE for Semester 2
3 students	\$1485 or 0.03 FTE for Semester 2	\$1485 or 0.03 FTE for Semester 2	\$2970 or 0.06 FTE for Semester 2
4 students	\$1980 or 0.04 FTE for Semester 2	\$1980 or 0.04 FTE for Semester 2	\$3960 or 0.08 FTE for Semester 2
5 students	\$2475 or 0.05 FTE for Semester 2	\$2475 or 0.05 FTE for Semester 2	\$4950 or 0.10 FTE for Semester 2
6 students	\$2970 or 0.06 FTE for Semester 2	\$2970 or 0.06 FTE for Semester 2	\$5940 or 0.12 FTE for Semester 2
7 students	\$3465 or 0.07 FTE for Semester 2	\$3465 or 0.07 FTE for Semester 2	\$6930 or 0.14 FTE for Semester 2
8 students	\$3960 or 0.08 FTE for Semester 2	\$3960 or 0.08 FTE for Semester 2	\$7920 or 0.16 FTE for Semester 2
9 students	\$4455 or 0.09 FTE for Semester 2	\$4455 or 0.09 FTE for Semester 2	\$8910 or 0.18 FTE for Semester 2
10 students	\$4950 or 0.10 FTE for Semester 2	\$4950 or 0.10 FTE for Semester 2	\$9900 or 0.20 FTE for Semester 2
11 students	\$5445 or 0.11 FTE for Semester 2	\$5445 or 0.11 FTE for Semester 2	\$10890 or 0.22 FTE for Semester 2
12 students	\$5940 or 0.12 FTE for Semester 2	\$5940 or 0.12 FTE for Semester 2	\$11880 or 0.24 FTE for Semester 2
13 students	\$6435 or 0.13 FTE for Semester 2	\$6435 or 0.13 FTE for Semester 2	\$12870 or 0.26 FTE for Semester 2
14 students	\$6930 or 0.14 FTE for Semester 2	\$6930 or 0.14 FTE for Semester 2	\$13860 or 0.28 FTE for Semester 2
15 students	\$7425 or 0.15 FTE for Semester 2	\$7425 or 0.15 FTE for Semester 2	\$14850 or 0.30 FTE for Semester 2
16 students	\$7920 or 0.16 FTE for Semester 2	\$7920 or 0.16 FTE for Semester 2	\$15840 or 0.32 FTE for Semester 2
17 students	\$8415 or 0.17 FTE for Semester 2	\$8415 or 0.17 FTE for Semester 2	\$16830 or 0.34 FTE for Semester 2
18 students	\$8910 or 0.18 FTE for Semester 2	\$8910 or 0.18 FTE for Semester 2	\$17820 or 0.36 FTE for Semester 2
19 students	\$9405 or 0.19 FTE for Semester 2	\$9405 or 0.19 FTE for Semester 2	\$18810 or 0.38 FTE for Semester 2
20 students	\$9900 or 0.2 FTE for Semester 2	\$9900 or 0.2 FTE for Semester 2	\$19 800 or 0.4 FTE for Semester 2

NB: Contact us to work out the amount for your school – phone **3634 1888** or email admin@impact.edu.au.