Digital Technologies in focus project proposal		
School name	Green Hill Public School (GHPS)	
School team members	**Team member**	
	1. Class Teacher (3–6) 2. Project leader (GHPS) 3. Class Teacher (K–2)	
School profile	Number of students Location Sector School type Year range Proportion of students who are Indigenous Proportion of students with disability Proportion students who have EAL/D	**<70** Remote Government Co-educational F-6 96% 92% N/A
Year level(s) involved in project and reason for choice	Kindergarten to Year 6	
Number of students involved	28	
Number of teachers involved	3	

INVESTIGATING AND DEFINING
Proposal details
What is your research question? (Identify the challenge generally; refine the statement; get specific and express as a question.) In the information age where everything is freely accessible, can students use a variety of existing technologies to openly discuss, critique and report about their own learning around the use of computational thinking and digital technologies in a creative environment which enables them to work collaboratively with their peers?

What are your project aims? (no more than five)

1. Have students regularly exposed to, operating and understanding digital technologies in everyday school life
2. Utilise existing and new technologies along with unplugged activities to engage students and develop computational thinking skills
3. To have students working collaboratively (in pairs or small groups) with a shared understanding of the purpose of each project/assignment
4. Staff to have a greater awareness and understanding of how the Digital Technologies curriculum can be effectively implemented in their programming and embedded in daily teaching practice
5. Establish and maintain strong professional collegial relationships within the local community which foster an environment conducive to open and honest discussions regarding learning, understanding and implementation of the Australian Curriculum: Digital Technologies

How will your school investigate the research question? (Consider literature review, connecting with other schools, working with members of your school's professional learning ecosystem.)

- Macleay public schools network utilised to assist with troubleshooting and build collegial knowledge
- All relevant technologies will be accessible to all staff, with those unfamiliar involved in regular professional learning sessions to gain the necessary skills to participate effectively.
- Visit neighbouring schools to gain a greater understanding of how others have established new learning spaces which encompass a variety of technologies and are tailored to maximising student engagement and learning experiences
- Engage in professional learning and discussion to improve practice with digital technologies and computational thinking

Please briefly describe your project. Include an explanation of how your project links to the Australian Curriculum: Digital Technologies and how it helps you achieve existing goals for your school. Include references to your school plan.

We want to upskill staff with digital technologies and have them regularly participate in professional learning activities. We want staff to feel comfortable and confident to embed Digital Technologies in their teaching and learning programs. Student will gain skills that will enhance their life prospects and gain employment in the future. We need students to become effective problem solvers to help them successfully navigate their futures.

Students in the early years will engage in hands-on, authentic opportunities incorporating computational thinking strategies. By giving them authentic opportunities across the curriculum we are helping them to develop their language and vocabulary skills along with the ability to solve problems.

Students in primary years will participate in activities centred around the Minecraft world and solve problems using computational thinking strategies in virtual and real-world activities.

State your criteria for success.

- Students actively engaged in learning experiences
- Staff feel confident in their ability to effectively plan, programme and teach the Australian Curriculum: Digital Technologies in a manner which enables students to successfully participate in classroom activities.
- Schools regularly promote their learning activities in a manner which engages their parents, families and the wider community.
- Staff work within a collegial network to build an understanding of how digital technologies can be effectively used within each school.

Students will:

- collect, explore and sort data, and use digital systems to present the data creatively
- create and organise ideas and information using information systems independently and with others, and share these with known people in safe online environments
- explain how student solutions and existing information systems meet common personal, school or community needs
- plan, create and communicate ideas and information independently and with others, applying agreed ethical and social protocols
- implement digital solutions as simple visual programs involving branching, iteration (repetition) and user input
- become confident thinkers and users of digital technologies.

GENERATING AND DESIGNING

How will your project be delivered? What actions are planned?

- All staff are to complete the teacher matrix. This is to be done by the end of Term 3, 2017.
- Staff involved in the project are to register for the CSER MOOC by the end of Term 4, Week 5, 2017.
- Staff to work collaboratively with staff from Bellbrook to complete the MOOC
- Staff to participate in professional learning activities offered as part of the project
- School to host computational thinking workshop
- Staff to engage in professional discussions around integration of Digital Technologies
- School to adopt a peer-mentoring approach to skills development
- School to host open day to share learning with wider community and engage parents in digital technologies activities

Are you collecting data? How do you plan to do this?

Data collected will include:

- Infinity Learning Maps to gauge each student's own thoughts about their learning. This will be regularly throughout the project.
- staff surveys centred on confidence in implementing the curriculum into programming and regular teaching practice
- students to participate in survey.

COLLABORATING AND MANAGING

Identify the resources you will need for the implementation of the project. (Include your key stakeholders / how ACARA can offer assistance / what will impact your capacity to deliver.)

- Working closely with ACARA curriculum officer Sarah Atkins to ensure the project is meeting the criteria established
- Liaising with Meridith Ebbs (CSER Project Officer) from the University of Adelaide to arrange for the appropriate digital technology to be available within our schools
- Regular professional learning opportunities, as well as those in the Macleay and Northern NSW, to fully grasp the concepts contained within the Australian Curriculum: Digital Technologies
- The opportunity to visit schools which already have highly successful programs up and running would be enormously beneficial.

Identify the potential risks your project may face. (Include risks, such as lack of resources; lack of interest by teachers, students, community.)

- Lack of resources is a definite risk as smaller schools don't have the same budget as larger schools have to be able to purchase some of the technological resources required.
- Lack of confidence by students in their own abilities. It will be overcome, but could be a slow process. Plenty of support will be required.

Consider the deliverables and timelines for this project (progress reports, webinars, podcasts, final report). What are the milestones for your school's project?

- All teachers complete school survey and teacher surveys by 18 September 2017
- DTiF school team participate in introductory workshop on 21 September 2017
- All teachers complete teacher matrix by 3 November 2017
- DTiF school team develop a project proposal by 3 November 2017
- ACARA review project proposal and provide feedback by 10 November 2017
- DTiF school team define the proposal by 17 November 2017
- Participate in progress report 1 via webinar with geo cluster/ACARA between 6 and 10 November 2017
- DTiF school team implement the project from December 2017 to December 2019
- Two teachers complete the University of Adelaide MOOC between September 2017 and December 2018
- Students complete student assessment (baseline data) September 2018
- DTiF school team participate in regular professional learning throughout 2017, 2018 and 2019
- DTiF school team submit progress report 2 in July 2018
- DTiF school team submit progress report 3 in December 2018
- By the end of 2018, it is anticipated that students in the early years will become more confident with their directional sequencing and vocabulary. Students in primary years will be proficient in using a variety of digital technologies as well as actively demonstrate and teach the use of them.
- DTiF school team submit progress report 4 in June 2019
- Students complete student assessment (final data) November 2019
- By the end of 2019, it is anticipated that staff will have a greater understanding of the digital technologies concepts, which will be evident in teaching and learning programs.
- DTiF school team present final report in December 2019

PRODUCING AND IMPLEMENTING

Describe how Digital Technologies will be implemented in your school.

In line with the Australian Curriculum: Digital Technologies level descriptions, we would hope that our students will:

- build on concepts, skills and processes developed in the Early Years Learning Framework, focusing on developing foundational skills in computational thinking and an awareness of personal experiences using digital systems. (K–2)
- have opportunities to create a range of digital solutions through guided play and integrated learning, such as using robotic toys to navigate a map or recording science data with software applications. (K–2)
- begin to learn about common digital systems and patterns that exist within data they collect. Students can organise, manipulate and present this data, including numerical, categorical, text, image, audio and video data, in creative ways to create meaning. (K–2)
- use the concept of abstraction when defining problems, to identify the most important information, such as the significant steps involved in making a sandwich. They will begin to develop their design skills by conceptualising algorithms as a sequence of steps for carrying out instructions, such as identifying steps in a process or controlling robotic devices. (K–2)
- describe how information systems meet information, communication and/or recreational needs. (K–2)
- learn to apply safe and ethical practices to protect themselves and others as they interact online for learning and communicating. (K–2)
- focus on further developing understanding and skills in computational thinking, such as categorising and outlining procedures; and developing an increasing awareness of how digital systems are used and could be used at home, in school and the local community. (Y3–4)
- have opportunities to create a range of digital solutions, such as interactive adventures that involve user choice, modelling simplified real-world systems and simple guessing games. (Y3–4)
- explore digital systems in terms of their components and peripheral devices such as digital microscopes, cameras and interactive whiteboards. They will collect, manipulate and interpret data, developing an understanding of the characteristics of data and their representation. (Y3–4)
- define simple problems using techniques such as summarising facts to deduce conclusions. They will record simple solutions to problems through text and diagrams and develop their designing skills from initially following prepared algorithms to describing their own that support branching (choice of options) and user input. Their solutions are implemented using appropriate software including visual programming languages that use graphical elements rather than text instructions. They explain, in general terms, how their solutions meet specific needs and consider how society may use digital systems to meet needs in environmentally sustainable ways. (Y3–4)
- identify and list the major steps needed to complete a task or project. When sharing ideas and communicating in online environments they develop an understanding of why it is important to consider the feelings of their audiences and apply safe practices and social protocols agreed by the class that demonstrate respectful behaviour. (Y3–4)
- focus on further developing understanding and skills in computational thinking such as identifying similarities in different problems and describing smaller components of complex systems, as well as focusing on the sustainability of information systems for current and future uses. (Y5–6)
- have opportunities to create a range of digital solutions, such as games or quizzes and interactive stories and animations. (Y5–6)
- develop an understanding of the role that individual components of digital systems play in the processing and representation of data. They acquire, validate, interpret, track and manage various types of data and are introduced to the concept of data states in digital systems and how data are transferred between systems. (Y5–6)

- develop abstractions by identifying common elements across similar problems and systems and develop an understanding of the relationship between models and the real-world systems they represent. (Y5–6)
- define problems clearly by identifying appropriate data and requirements. When designing, they consider how users will interact with the solutions, and check and validate their designs to increase the likelihood of creating working solutions. Students increase the sophistication of their algorithms by identifying repetition and incorporate repeat instructions or structures when implementing their solutions through visual programming, such as reading user input until an answer is guessed correctly in a quiz. They evaluate their solutions and examine the sustainability of their own and existing information systems. (Y5–6)
- progress from managing the creation of their own ideas and information for sharing to working collaboratively. In doing so, they learn to negotiate and develop plans to complete tasks. When engaging with others, they take personal and physical safety into account, applying social and ethical protocols that acknowledge factors such as social differences and privacy of personal information. They also develop their skills in applying technical protocols such as devising file naming conventions that are meaningful and determining safe storage locations to protect data and information. (Y5–6)
- This will all happen within the context of the following:
  - Students in the early years will engage in hands-on, authentic opportunities incorporating computational thinking strategies. By giving them authentic opportunities across the curriculum we are helping them to develop their language and vocabulary skills along with the ability to solve problems.
  - Students in primary years will participate in activities centred around the Minecraft world and solve problems using computational thinking strategies in virtual and real-world activities.

Indicators of success:

- Students will be achieving stage-appropriate outcomes.
- Students will possess stage-appropriate Knowledge and Understanding and Processes and Production Skills as outlined in the Australian Curriculum: Digital Technologies.
- Teaching staff will be confident and competent in planning, programming and teaching from the Australian Curriculum: Digital Technologies.
- Teaching staff will work collaboratively to ensure students are highly engaged in their learning, particularly in their awareness and understanding around how digital systems are used and can be used at home, in school and in the community.

EVALUATING

ACARA will be assessing students at the beginning and at the end of the project in terms of ICT literacy and computational thinking skills.

What additional evidence will you need to collect in relation to your school's specific action research question? You may like to consider:

Student work samples

Recording student voice

- Students will interview each other via video about the processes and procedures used in the production of their digital/video newsletter. Student understanding of ICT literacy and demonstration of computational thinking skills should be easily identifiable by the complexity of the questions asked as well as the answers received.

Recording an illustration of practice

- Using Infinity Learning Maps will provide us with a visual illustration of the student learning and development that has taken place (when compared to the initial map in early 2018) as well as their depth of understanding in terms of how they learn and who/what helps them learn.

ACARA will be surveying teachers at the beginning and at the end of the project in terms of their ICT literacy and their confidence in teaching Digital Technologies knowledge, understanding and skills.

What additional evidence will you need to collect in relation to your school's specific action research question?

- Teaching programs will have the Australian Curriculum: Digital Technologies elements thoroughly embedded throughout each of the learning areas.
- Teachers have a deep understanding of the Australian Curriculum: Digital Technologies and can lead and enable others who may require further assistance; i.e. SASS staff, other staff from neighbouring schools. This can be identified via an exit survey using the Digital Technologies Teacher Self-Assessment Matrix.
- Minutes from staff meetings and Community of Schools meetings can serve as documented evidence focused on analysing student data, planning and programming, and developing the capabilities of students/staff.

Please add any other comments about your project that you would like to make.

As of January 2018, our school will have 32 students enrolled (97% Aboriginal and/or Torres Strait Islander). Our Family Occupation and Education Index (FOEI), the indicator of social disadvantage, sits at 222 – the 6th highest in New South Wales. Our community all have access to some form of device; however, locating a PC at home is a rarity. We work closely with our colleagues in the Macleay Public Schools group, which enables our staff (1 principal, 2 teachers, 1 SAM, 2 SLSOs, 1 AEO) to benefit from a wonderfully diverse professional learning network.

Thank you for your time and commitment to the Digital Technologies in focus project.