## F-10 Inquiry Skills Scope and Sequence

and

## F-10 Core Skills and Tools

Inquiry curriculum skills, evident in the Australian Curriculum and general capabilities, mapped to the Guided Inquiry Design Framework, and core essential skills and web tools to support teaching and learning programs.

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With contribution from Lee FitzGerald

The inquiry framework referred to below comes from Guided Inquiry Design: A Framework for Inquiry in Your School by Carol C Kuhlthau, Leslie K Maniotes and Anne K Caspari. In 2012, Karen Bonanno was given permission by the authors of Guided Inquiry Design: A Framework for Inquiry in Your School, Carol Kuhlthau, Leslie Maniotes and Ann Caspari, to develop a scope and sequence tying the five kinds of learning to the inquiry skills and general capabilities in the Australian Curriculum.
© Guided Inquiry Design Framework - Kuhlthau C. et al. (2012). Guided Inquiry Design: A Framework for Inquiry in Your School. Santa Barbara, California: Libraries Unlimited.


Mapping the curriculum and general capabilities to Guided Inquiry Design Framework by Karen Bonanno. (2015). Zillmere Queensland: Eduwebinar Pty Ltd.

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## Legend for document:

Black $=$ Content descriptors from the Australian Curriculum

## A. $)$ Australian <br> CURRICULUM

Blue = Descriptors from the Australian Curriculum general capabilities

Red = suggested introduction of inquiry skills as identified in Kulthau, C. et al. (2012). Guided Inquiry Design: A Framework for Inquiry in Your School. Santa Barbara, California: Libraries Unlimited. Contribution by Lee FitzGerald and Karen Bonanno.

| Guided Inquiry <br> Design Framework | F- Year 2 | Year 3-4 | Year 5-6 | Year 7-8 | Year 9-10 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Open | HISTORY <br> Invitation to inquiry <br> Open minds <br> Stimulate curiosity <br> past, present and future | Express interest in <br> topic <br> Identify key words and <br> phrases | Look for aspect of <br> topic that engages | Consider aspects of <br> topic that engages <br> Identify key words, <br> concepts and ideas | Identify and group key <br> concepts and ideas |
|  | SCIENCE <br> Respond to questions <br> about familiar objects <br> and events | SCIENCE <br> With guidance, <br> identify questions in <br> familiar contexts that <br> can be investigated <br> scientifically and <br> predict what might <br> happen based on <br> prior knowledge | Pose questions for <br> discussion and <br> exploration <br> Respond to and pose <br> questions, and make <br> predictions about <br> familiar objects and <br> events | Pose pertinent <br> questions for <br> discussion and <br> exploration | Pose leading <br> questions for <br> discussion and <br> exploration |
| Understand an <br> information search <br> process / framework | Apply an information <br> search process / <br> framework to <br> breakdown tasks into <br> components |  |  |  |  |


|  | F-Year 2 <br> Not applicable | Year 3-4 <br> CIVICS \& CITIZENSHIP Work in groups to identify issues, possible solutions and a plan for action | Year 5-6 <br> CIVICS \& CITIZENSHIP <br> Work in groups to identify issues and develop possible solutions and plan for action using decision making processes | Year 7-8 <br> CIVICS \& CITIZENSHIP <br> Use democratic processes to reach consensus on a course of action relating to a civics or citizenship issue and plan for that action | Year 9-10 <br> CIVICS \& CITIZENSHIP Use democratic processes to reach consensus on a course of action relating to a civics or citizenship issue and plan for that action |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Immerse <br> Build background knowledge Connect to content Discover interesting ideas | F-Year 2 <br> Not applicable | Year 3-4 <br> CIVICS \& CITIZENSHIP <br> Interact with others with respect, share views and recognize there are different points of view | Year 5-6 <br> CIVICS \& CITIZENSHIP <br> Interact with others with respect, identify different points of view and share personal perspectives and opinions | Year 7-8 <br> CIVICS \& CITIZENSHIP Appreciate multiple perspectives and use strategies to mediate differences | Year 9-10 <br> CIVICS \& CITIZENSHIP Recognise and consider multiple perspectives and ambiguities, and use strategies to negotiate and resolve contentious issues |
|  | $\text { F - Year } 2$ <br> As a class, identify prior knowledge on simple topics <br> Brainstorm for possible answers | Year 3-4 <br> With guidance, identify prior knowledge on simple topics <br> Brainstorm for possible answers | Year 5-6 <br> Identify prior knowledge on suggested topics <br> Brainstorm for answers <br> Choose between | Year 7-8 <br> Articulate prior knowledge <br> Relate inquiry task to content <br> Relate knowledge to real world | Year 9-10 <br> Articulate and record prior knowledge <br> Relate inquiry task to real world <br> Relate inquiry task to specific content |


|  |  | Choose between alternative interesting topics | alternative interesting topics | Brainstorm and record answers <br> Choose between alternative interesting topics | Brainstorm and record answers <br> Choose an interesting topic to explore |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | F-Year 2 <br> ICT <br> Use ICT to identify, record and classify textual and graphic information to show what is known and what needs to be investigated |  |  |  |  |
| Explore <br> Explore interesting ideas <br> Look around Dip in | F- Year 2 <br> HISTORY <br> Explore a range of sources about the past <br> Explore a point of view | Year 3-4 <br> HISTORY <br> Locate relevant information from sources provided | Year 5-6 <br> HISTORY <br> Identify points of view in the past and present <br> Identify and locate a range of relevant sources | Year 7-8 <br> HISTORY <br> Identify and locate relevant sources, using ICT and other methods <br> Identify and describe points of view, attitudes and values in primary and secondary sources | Year 9-10 <br> HISTORY <br> Identify and analyse the perspectives of people from the past <br> Identify and analyse different historical interpretations (including their own) |


|  | F-Year 2 <br> SCIENCE <br> Explore and make <br> observations by using <br> the senses <br> Participate in different <br> types of guided <br> investigations to explore <br> and answer questions, <br> such as manipulating <br> materials, testing ideas, <br> and accessing <br> information sources |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  |  | Fear 3-4 <br> F-Year 2 <br>  <br> TECHNOLOGIES <br> Explore needs or <br> opportunities for <br> designing, and the <br> technologies needed to <br> realise designed <br> solutions |  <br> TECHNOLOGIES <br> Critique needs or <br> opportunities for <br> designing and <br> explore and test a <br> variety of materials, <br> components, tools <br> and equipment and <br> the techniques <br> needed to produce <br> designed solutions | Year 5-6 |



| Identify <br> Pause and ponder Identify inquiry question Decide direction | F-Year 2 <br> HISTORY <br> Pose questions about the past using sources provided | Year 3-4 <br> HISTORY <br> Pose a range of questions about the past <br> Identify different points of view | Year 5-6 <br> HISTORY <br> Identify questions to inform an historical inquiry | Year 7-8 <br> HISTORY <br> Identify a range of questions about the past to inform a historical inquiry | Year 9-10 <br> HISTORY <br> Identify and select different kinds of questions about the past to inform historical inquiry <br> Evaluate and enhance these questions |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | SCIENCE <br> Respond to and pose questions, and make predictions about familiar objects and events <br> Participate in different types of guided investigations to explore and answer questions, such as manipulating materials, testing ideas, and accessing information sources | SCIENCE <br> With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge <br> Suggest ways to plan and conduct investigations to find answers to questions | SCIENCE <br> With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be <br> With guidance, plan appropriate investigation methods to answer questions or solve problems | SCIENCE <br> Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge | SCIENCE <br> Formulate questions or hypotheses than can be investigated scientifically <br> Plan, select and use appropriate investigation methods, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods |


|  | F-Year 2 <br> GEOGRAPHY <br> Make observations about familiar places and pose questions about them <br> Pose questions about familiar and unfamiliar places | Year 3-4 <br> GEOGRAPHY <br> Develop geographical questions to investigate | Year 5-6 <br> GEOGRAPHY <br> Develop geographical questions to investigate and plan an inquiry | Year 7-8 <br> GEOGRAPHY <br> Develop geographically significant questions and plan an inquiry using appropriate geographical methodologies and concepts | Year 9-10 <br> GEOGRAPHY <br> Develop geographically significant questions and plan an inquiry that identifies and applies appropriate geographical methodologies and concepts |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Not applicable | Not applicable | ECONOMICS \& BUSINESS <br> Develop questions to guide an investigation of an economic or business issue or event, and gather data and information from observation, print and online sources | ECONOMICS \& BUSINESS <br> Develop questions about an economic or business issue or event, and plan and conduct an investigation or project | ECONOMICS \& BUSINESS Develop questions and hypotheses about an economic or business issue or event, and plan and conduct an investigation |
|  | Not applicable | CIVICS \& CITIZENSHIP Pose questions about the society in which they live | CIVICS \& CITIZENSHIP Develop questions and gather a range of information to investigate the society in which they live | CIVICS \& CITIZENSHIP Develop a range of questions to investigate Australia's political and legal systems | CIVICS \& CITIZENSHIP Develop, select and evaluate a range of questions to investigate Australia's political and legal systems |


|  | F-Year 2 <br> DIGITAL <br> TECHNOLOGIES <br> Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems | Year 3-4 <br> DIGITAL <br> TECHNOLOGIES <br> Define simple problems, and describe and follow a sequence of steps and decisions (algorithms) needed to solve them | Year 5-6 <br> DIGITAL <br> TECHNOLOGIES <br> Define problems in terms of data and functional requirements, and identify features similar to previously solved problems | Year 7-8 <br> DIGITAL <br> TECHNOLOGIES <br> Define and decompose real-world problems taking into account functional requirements and economic, environmental, social, technical and usability constraints | Year 9-10 <br> DIGITAL <br> TECHNOLOGIES <br> Precisely define and decompose real-world problems, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | F-Year 2 <br> ICT <br> Use ICT to identify, record and classify textual and graphic information to show what is known and what needs to be investigated | Year 3-4 <br> ICT <br> Use ICT to plan an information search or generation of information, recognising some pattern within the information | Year 5-6 <br> ICT <br> Use a range of ICT to identify and represent patterns in sets of information and to pose questions to guide searching for, or generating, further information | Year 7-8 <br> ICT <br> Use a range of ICT to analyse information in terms of implicit patterns and structures as a basis to plan an information search or generation | Year 9-10 <br> ICT <br> Select and use a range of ICT independently and collaboratively, analyse information to frame questions and plan search strategies or data generation |
|  | CRITICAL / CREATIVE THINKING <br> Pose factual and exploratory questions based on personal interests and experiences | CRITICAL / CREATIVE THINKING Pose questions to expand their knowledge about the world | CRITICAL / CREATIVE THINKING <br> Pose questions to clarify and interpret information and probe for causes and consequences | CRITICAL / CREATIVE THINKING Pose questions to probe assumptions and investigate complex issues | CRITICAL / CREATIVE THINKING <br> Pose questions to critically analyse complex issues and abstract ideas |


|  | Pose questions to identify and clarify issues, and compare information in their world |  |  |  |  |
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| Gather <br> Gather important information Go broad Go deep | F-Year 2 <br> HISTORY <br> Identify and compare features of objects from the past and present | Year 3-4 <br> HISTORY <br> Use historical terms <br> Identify sources <br> Locate relevant information from sources provided | Year 5-6 <br> HISTORY <br> Use historical terms and concepts <br> Locate information related to inquiry questions in a range of sources <br> Compare information from a range of sources | Year 7-8 <br> HISTORY <br> Use historical terms and concepts <br> Identify and locate relevant sources, using <br> ICT and other methods <br> Identify the origin and purpose of primary and secondary sources <br> Locate, compare, select and use information from a range of sources as evidence <br> Identify and describe points of view, attitudes and values in primary and secondary sources | Year 9-10 <br> HISTORY <br> Use historical terms and concepts <br> Identify and locate relevant sources, using ICT and other methods <br> Identify the origin, purpose and context of primary and secondary sources <br> Process and synthesise information from a range of sources for use as evidence in an historical argument <br> Evaluate the reliability and usefulness of primary \& secondary sources <br> Identify and analyse |



|  |  |  | technologies as appropriate <br> Compare data with predictions and use as evidence in developing explanations | and use scientific understanding to identify relationships and draw conclusions <br> Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed | validity of information in secondary sources and evaluate the approaches used to solve problems |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | F-Year 2 | Year 3-4 | Year 5-6 | Year 7-8 | Year 9-10 |
|  | GEOGRAPHY <br> Record geographical data and information collected by observation <br> Collect and record geographical data and information, for example, by observing, by interviewing, or from sources such as photographs, plans, satellite images, story books and films | GEOGRAPHY <br> Collect and record relevant geographical data and information, for example, by observing, by interviewing, conducting surveys, measuring, or from sources such as maps, photographs, satellite images, the media and the internet | GEOGRAPHY <br> Collect and record relevant geographical data and information, using ethical protocols, from primary and secondary sources, for example, people, maps, plans, photographs, satellite images, statistical sources and reports <br> Evaluate sources for | GEOGRAPHY <br> Collect, select and record relevant geographical data and information, using ethical protocols, from appropriate primary and secondary sources <br> Evaluate sources for their reliability and usefulness and represent data in a range of appropriate forms, for example, climate graphs, | GEOGRAPHY <br> Collect, select, record and organise relevant data and geographical information, using ethical protocols, from a range of appropriate primary and secondary sources <br> Evaluate sources for their reliability, bias and Usefulness, and represent multivariable data in a |


|  |  |  | their usefulness, and represent data in different forms, for example, maps, plans, graphs, tables, sketches and diagrams | compound column graphs, population pyramids, tables, field sketches and annotated diagrams, with and without the use of digital and spatial technologies | range of appropriate forms, for example, scatter plots, tables, field sketches and annotated diagrams, with and without the use of digital and spatial technologies |
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|  | F-Year 2 <br> Not applicable | Year 3-4 <br> Not applicable | Year 5-6 <br> ECONOMIC \& BUSINESS Develop questions to guide an investigation of an economic or business issue or event, and gather data and information from observation, print and online sources | Year 7-8 <br> ECONOMIC \& BUSINESS <br> Gather relevant data and information from a range of digital, online and print sources | Year 9-10 <br> ECONOMIC \& BUSINESS <br> Gather relevant and reliable data and information from a range of digital, online and print sources |
|  | F-Year 2 <br> Not applicable | Year 3-4 <br> CIVICS \& CITIZENSHIP | Year 5-6 <br> CIVICS \& CITIZENSHIP Develop questions and gather a range of information to investigate the society in which they live | Year 7-8 <br> CIVICS \& CITIZENSHIP Identify, gather and sort information and ideas from a range of sources | Year 9-10 <br> CIVICS \& CITIZENSHIP Identify, gather and sort information and ideas from a range of sources and reference as appropriate |




|  | F-Year 2 <br> CRITICAL / CREATIVE <br> THINKING <br> Gather similar information or depictions from given sources | Year 3-4 <br> CRITICAL / CREATIVE THINKING <br> Identify main ideas and select and clarify information from a range of sources <br> Collect, compare and categorise facts and opinions found in a widening range of sources | Year 5-6 <br> Collect, compare and categorise information from a range of sources to discern the difference between opinion and fact <br> Keep a log of essential bibliographic details | Year 7-8 <br> Collect, compare and categorise information from digital, online and print sources <br> Scrutinise information for currency, accuracy, authenticity and relevancy <br> Keep a log of bibliographic details | Year 9-10 <br> Collect, synthesise and organise information from a range of digital, online and print sources <br> Critique information for reliability, usefulness and purpose <br> Record full bibliographic details |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Create / Share | F-Year 2 | Year 3-4 | Year 5-6 | Year 7-8 | Year 9-10 |
| Reflect on learning Go beyond facts to make meaning Create to communicate <br> Learn from each other Share learning Tell your story | HISTORY <br> Sequence familiar objects and events <br> Distinguish between the past, present and future <br> Develop a narrative about the past <br> Use a range of communication forms (oral, graphic, written, role play) and digital | HISTORY <br> Sequence historical people and events <br> Develop texts, particularly narratives <br> Use a range of communication forms (oral, graphic, written) and digital technologies | HISTORY <br> Sequence historical people and events <br> Develop texts, particularly narratives and descriptions, which incorporate source materials <br> Use a range of communication forms (oral, graphic, written) and digital | HISTORY <br> Sequence historical events, developments and periods <br> Draw conclusions about the usefulness of sources <br> Develop texts, particularly descriptions and explanations that use evidence from a range | HISTORY <br> Use chronological sequencing to demonstrate the relationship between events and developments in different periods and places <br> Develop texts, particularly descriptions and discussions that use |


|  | technologies |  | technologies | of sources that are acknowledged <br> Use a range of communication forms (oral, graphic, written) and digital technologies | evidence from a range of sources that are referenced <br> Select and use a range of communication forms (oral, graphic, written) and digital technologies |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | F - Year 2 <br> SCIENCE <br> Share observations and ideas <br> Represent and communicate observations and ideas in a variety of ways such as oral and written language, drawing and role play <br> Use a range of methods to sort information, including drawings and provided tables | Year 3-4 <br> SCIENCE <br> Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports | Year 5-6 <br> SCIENCE <br> Communicate ideas, explanations and processes in a variety of ways, including multi-modal texts | Year 7-8 <br> SCIENCE <br> Communicate ideas, findings and solutions to problems using scientific language and representations using digital technologies as appropriate | Year 9-10 <br> SCIENCE <br> Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations |



|  | south, opposite, near, far | range of communication forms, for example, written, oral, digital, graphic, tabular and visual, and use geographical terminology | technologies as appropriate, and identify spatial distributions, patterns and trends, and infer relationships to draw conclusions <br> Present findings and ideas in a range of communication forms, for example, written, oral, digital, graphic, tabular, visual and maps, using geographical terminology and digital technologies as appropriate | appropriate <br> Analyse geographical data and other information using qualitative and quantitative methods, and digital and spatial technologies as <br> appropriate, to identify and propose explanations for spatial distributions, patterns and trends and infer relationships <br> Apply geographical concepts to draw conclusions based on the analysis of the data and information collected <br> Present findings, arguments and ideas in a range of communication forms selected to suit a particular audience and purpose, using geographical | Evaluate multivariable data and other geographical information using qualitative and quantitative methods, and digital and spatial technologies as appropriate, to make generalisations and inferences, propose explanations for patterns, trends, relationships and anomalies, and predict <br> outcomes <br> Apply geographical concepts to synthesise information from various sources and draw conclusions based on the analysis of data and information, taking into account alternative |
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|  |  |  |  | terminology and digital technologies as appropriate | points of view <br> Present findings, arguments and explanations in a range <br> of appropriate communication forms, selected for their effectiveness and to suit audience and purpose, using relevant geographical terminology and digital technologies as appropriate |
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|  | F-Year 2 <br> Not applicable | Year 3-4 <br> Not applicable | Year 5-6 <br> ECONOMICS \& BUSINESS <br> Sort data and information into categories <br> Present findings in an appropriate format using economics and business terms, and reflect on the possible effects of decisions | Year 7-8 <br> ECONOMICS \& BUSINESS <br> Interpret data and information displayed in different formats to identify relationships and trends <br> Present evidencebased conclusions using economics and business language | Year 9-10 <br> ECONOMICS \& BUSINESS <br> Analyse data and information in different formats to explain cause and effect relationships, make predications and illustrate alternative perspectives |


|  |  |  |  | and concepts in a range of appropriate formats, and reflect on the consequences of alternative actions | Present reasoned arguments and evidence-based conclusions in a range of appropriate formats using economics and business conventions, language and concepts |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | F-Year 2 | Year 3-4 | Year 5-6 | Year 7-8 | Year 9-10 |
|  | Not applicable | CIVICS \& CITIZENSHIP | CIVICS \& CITIZENSHIP <br> Identify over- | CIVICS \& CITIZENSHIP | CIVICS \& CITIZENSHIP |
|  |  | Distinguish facts from opinion in relation to civics and citizenship topics and issues | generalised statements in relation to civics and citizenship topics and issues | Critically analyse information and ideas from a range of sources in relation to civics and citizenship | Critically evaluate information and ideas from a range of sources in relation to civics and citizenship |
|  |  | develop a point of view <br> Present ideas and opinions on civics | Use and evaluate a range of information to develop a point of view | Present evidencebased civics and citizenship arguments using subject-specific | Account for different interpretations and points of view |
|  |  | and citizenship and issues using civics and citizenship terms | Present civics and citizenship ideas and viewpoints for a particular purpose using civics and citizenship terms and | language | Present evidencebased civics and citizenship arguments using subject-specific language |




|  |  |  |  | projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability |
| :---: | :---: | :---: | :---: | :---: |
| F-Year 2 | Year 3-4 | Year 5-6 | Year 7-8 | Year 9-10 |
| ICT | ICT | ICT | ICT | ICT |
| Recognise ownership | Acknowledge when | Identify the legal | Apply practices that | Identify and describe |
| over their own digital | they use digital | obligations regarding | comply with legal | ethical dilemmas and |
| work | products created by | the ownership and use | obligations regarding | consciously apply |
|  | someone else, and | of digital products and | the ownership and | practices that protect |
| Recognise ownership of | start to indicate the | apply some | use of digital products | intellectual property. |
| others produce and that | source | referencing conventions | resources. | Independently apply |
| what they create or provide can be used or | Apply standard guidelines and take | Identify the risks to | Identify and value the rights to identity, | appropriate strategies protect rights, |
| misused by others | action to avoid the common dangers to | identity, privacy and emotional safety for | privacy and emotional safety for themselves | identity, privacy and emotional safety of |
| Follow class rules when | personal security | themselves with using | and others with using | others with using ICT, |
| sharing personal | when using ICT and | ICT and apply | ICT and apply | and discriminate |
| information with known | apply appropriate | generally accepted | generally accepted | between protocols |
| audiences and demonstrate an | basic social protocols when using ICT to | social protocols when sharing information in | social protocols when using ICT to | suitable for different communication tools |
| demonstrate an awareness of applying | when using ICT to communicate with | sharing information in online environments, | collaborate with local | communication tools when collaborating |
| awareness of applying social protocols with | unknown audiences | taking into account | and global | with local and global |
| using ICT to |  | different social and | communities | communities |
| communicate | Use ICT to plan an | cultural contexts |  |  |
| Use ICT to prepare simple plans to find | information search or generation of information, | Use a range of ICT to identify and represent | Use a range of ICT to analyse information in terms of implicit | Select and use a range of ICT independently and |


|  | solutions or answers to questions <br> Experiment with ICT as a creative tool to generate simple solutions, modifications or data representations for particular audiences or purposes <br> Use purposefully selected ICT tools safely to share and exchange information with appropriate local audiences <br> Understand that computer mediated communications may be received later by the receiver | recognising some pattern within the information <br> Use ICT to generate ideas and plan solutions <br> Create and modify simple digital solutions, creative outputs or data representation/transf ormation for particular purposes <br> Use appropriate ICT tools safely to share and exchange information with appropriate known audiences <br> Understand that computer mediated communications are directed to an audience for a purpose | patterns in sets of information to pose questions to guide searching for, or generating, further information <br> Assess the suitability of data or information using a range of appropriate given criteria <br> Use ICT effectively to record ideas, represent thinking and plan solutions <br> Independently or collaboratively create and modify digital solutions, creative outputs or data representation/transfo rmation for particular audiences and purposes <br> Select and use appropriate ICT tools safely to share and exchange information and to safely | patterns and <br> structures as a basis to plan an information search or generation <br> Assess the suitability of data or information using appropriate own criteria <br> Use appropriate ICT to collaboratively generate ideas and develop plans <br> Design and modify simple digital solutions, or multimodal creative outputs or data transformations for particular audiences and purposes following recognised conventions <br> Select and use appropriate ICT tools safely to lead groups in sharing and exchanging information, and taking part in online | collaboratively, analyse information to frame questions and plan search strategies or data generation <br> Develop and use criteria systemically to evaluate the quality, suitability and credibility of located data or information and sources <br> Select and use ICT to articulate ideas and concepts, and plan the development of complex solutions <br> Design, modify and manage complex digital solutions, or multimodal creative outputs or data transformations for a range of audiences and purposes <br> Select and use a range of ICT tools efficiently and safely to share and |
| :---: | :---: | :---: | :---: | :---: | :---: |



|  | or create things in new ways and connect two things that seem different <br> Suggest alternative and creative ways to approach a given situation or task <br> Predict what might happen in a given situation and when putting ideas into action <br> Build on what they know to create ideas and possibilities in ways that are new to them <br> Identify and compare creative ideas to think broadly about a given situation or problems <br> Investigate options and predict possible outcomes when putting ideas into action <br> Connect information from one setting to another | range of options when seeking solutions and putting ideas into action <br> Transfer and apply information in one setting to enrich another <br> Draw on prior knowledge and use evidence when choosing a course of action or drawing conclusions | sources to create new possibilities <br> Identify situations where current approaches do not work, challenge existing ideas and generate alternative solutions <br> Assess and test options to identify the most effective solution and to put ideas into action <br> Apply knowledge gained from one context to another unrelated context and identify new meaning <br> Scrutinise ideas or concepts, test conclusions and modify actions when designing a course of action | Draw parallels between known and new ideas to create new ways of achieving goals <br> Generate alternatives and innovative solutions, and adapt ideas, including when information is limited or conflicting <br> Predict possibilities, and identify and test consequences when seeking solutions and putting ideas into action <br> Justify reasons for decisions when transferring information to similar and different contexts <br> Differentiate the components of a designed course of action and tolerate ambiguities when drawing conclusions | complex ideas using imagery, analogies and symbolism <br> Speculate on creative options to modify ideas when circumstances change <br> Assess risks and explain contingencies, taking account of a range of perspectives, when seeking solutions and putting complex ideas into action <br> Identify, plan and justify transference of knowledge to new concepts <br> Use logical and abstract thinking to analyse synthesise complex information to inform a course of action |
| :---: | :---: | :---: | :---: | :---: | :---: |


|  | Use information from a previous experience to inform a new idea <br> Share their thinking about possible courses of action <br> Identify alternative courses of action or possible conclusions when presented with new information |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Evaluate <br> Evaluate achievement of learning goals Reflect on content Reflect on process | F-Year 2 <br> SCIENCE <br> Compare observations with those of others | Year 3-4 <br> SCIENCE <br> Reflect on the investigation, including whether a test was fair or not | Year 5-6 <br> SCIENCE <br> Suggest improvements to the methods used to investigate a question or solve a problem | Year 7-8 <br> SCIENCE <br> Reflect on the method used to investigate a question or solve a problem, including evaluating the quality of the data collected, and identify improvements to the method <br> Use scientific knowledge and findings from investigations to evaluate claims | Year 9-10 <br> SCIENCE <br> Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data |


|  | F-Year 2 <br> GEOGRAPHY <br> Reflect on their learning to suggest ways that they can look after a familiar place <br> Reflect on their learning and suggest responses to their findings | Year 3-4 <br> GEOGRAPHY <br> Reflect on their learning to propose individual action in response to a contemporary geographical challenge and identify the expected effects of the proposal | Year 5-6 <br> GEOGRAPHY <br> Reflect on their learning to propose individual and collective action in response to a contemporary geographical challenge and describe the expected effects of their proposal on different groups of people | Year 7-8 <br> GEOGRAPHY <br> Reflect on their learning to propose individual and collective action in response to a contemporary geographical challenge, taking account of environmental, economic and social considerations, and predict the expected outcomes of their proposal | Year 9-10 <br> GEOGRAPHY <br> Reflect on and evaluate the findings of the inquiry to propose individual and collective action in response to a contemporary geographical challenge, taking account of environmental, economic and social considerations; and explain the predicted outcomes and consequences of their proposal |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\text { F-Year } 2$ <br> Not applicable | Year 3-4 <br> Not applicable | Year 5-6 <br> ECONOMICS \& BUSINESS <br> Present findings in an appropriate format using economics and business terms, and reflect on the possible effects of decisions | Year 7-8 <br> ECONOMICS \& BUSINESS <br> Present evidencebased conclusions using economics and business language and concepts in a range of appropriate formats, and reflect | Year 9-10 <br> ECONOMICS \& BUSINESS <br> Reflect on the intended and unintended consequences of economic and business decisions |


|  |  |  |  | on the consequences of alternative actions |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\text { F-Year } 2$ <br> Not applicable | Year 3-4 <br> CIVICS \& CITIZENSHIP <br> Reflect on their cultural identity and how it might be similar and different from others | Year 5-6 <br> CIVICS \& CITIZENSHIP <br> Reflect on personal roles and actions as a citizen in the school and in the community | Year 7-8 <br> CIVICS \& CITIZENSHIP <br> Reflect on their role as a citizen in Australia's democracy | Year 9-10 <br> CIVICS \& CITIZENSHIP Reflect on their role as a citizen in Australian, regional and global contexts |
|  | F-Year 2 <br>  <br> TECHNOLOGIES <br> Use personal preferences to evaluate the success of design ideas, processes and solutions including their care for environment | Year 3-4 <br> DESIGN \& TECHNOLOGIES Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment | Year 5-6 <br> DESIGN \& TECHNOLOGIES Negotiate criteria for success that include consideration of sustainability to evaluate design ideas, processes and solutions | Year 7-8 <br> DESIGN \& TECHNOLOGIES Independently develop criteria for success to assess design ideas, processes and solutions and their sustainability | Year 9-10 <br> DESIGN \& TECHNOLOGIES Evaluate design ideas, processes and solutions against comprehensive criteria for success recognising the need for sustainability |
|  | F-Year 2 <br> ICT <br> Identify how they use ICT in multiple ways on multiple devices <br> Identify how ICT is used | Year 3-4 <br> ICT <br> Identify the value and role of ICT use at home and school <br> Explain why located | Year 5-6 <br> ICT <br> Explain the main uses of ICT at school, home and in the local community, and recognise its potential | Year 7-8 <br> ICT <br> Explain the benefits and risks of the use of ICT for particular people in work and home environments | Year 9-10 <br> ICT <br> Assess the impact of ICT in the workplace in society, and speculate on its role in the future and how |



|  | Identify reasoning used <br> in choices or actions in <br> specific situations <br> Check whether they are <br> satisfied with the <br> outcome of tasks or <br> actions <br> Evaluate whether they <br> have accomplished what <br> they set out to achieve |  | performances, <br> methods and courses <br> of action against given <br> criteria | unexpected outcomes <br> against criteria they <br> have identified |
| :--- | :--- | :--- | :--- | :--- |
| product and <br> performances and <br> implement courses of <br> action to achieve <br> desired outcomes <br> against criteria they <br> have identified |  |  |  |  |

## Source documents

ACARA. (n.d.). Australian Curriculum: Science. Australian Curriculum and Assessment Reporting Authority: Sydney. Viewed at http://www.australiancurriculum.edu.au/science/curriculum/f-10?layout=1

ACARA. (n.d.). Australian Curriculum: Humanities and Social Science Australian Curriculum and Assessment Reporting Authority: Sydney. Viewed at http://www.australiancurriculum.edu.au/humanities-and-social-sciences/introduction

ACARA. (n.d.). Australian Curriculum: Digital Technologies. Australian Curriculum and Assessment Reporting Authority: Sydney. Viewed at http://www.australiancurriculum.edu.au/technologies/digital-technologies/curriculum/f-10?layout=1

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http://www.australiancurriculum.edu.au/GeneralCapabilities/Pdf/Critical-and-creative-thinking
ACARA. (n.d.). Information and communication technology (ICT) capability. Australian Curriculum and Assessment Report Authority: Sydney. Viewed at http://www.australiancurriculum.edu.au/GeneralCapabilities/Pdf/ICT

Kuhlthau, C.C., Maniotes, L.K. and Caspari, A.K. (2012). Guided Inquiry design: a framework for inquiry in your school. Santa Barbara, California: Libraries Unlimited.

## Guided Inquiry Design Framework: Core skills and tools

| Core skills in Guided Inquiry Design Framework | Inquiry community in Guided Inquiry Design Framework | Tools http://eduwebinar.com.au/web-tools-to-support-inquiry-based-learning |
| :---: | :---: | :---: |
| Open - Students <br> Ask 6 Ws (what, when, where, which, who, why) <br> Define <br> Describe <br> Find <br> List <br> Name <br> Recall <br> Recognise <br> Remember <br> Retrieve <br> Understand inquiry process <br> Unpack task | Open - Inquiry community <br> Engage <br> Highlight concepts Introduce key inquiry questions Invite to inquiry Open minds Set tone and direction Spark conversation Stimulate curiosity | Bubbl.us <br> https://bubbl.us/ <br> Lino <br> http://en.linoit.com/ <br> Mindmeister <br> http://www.mindmeister.com/ <br> Padlet <br> http://padlet.com/ <br> Poll Everywhere <br> http://www.polleverywhere.com/k12- <br> student-response-system <br> Popplet <br> http://popplet.com/ <br> Spiderscribe <br> http://www.spiderscribe.net/ <br> Stoodle <br> http://stoodle.ck12.org/ <br> Stormboard <br> http://stormboard.com/ <br> TED-Ed <br> http://ed.ted.com/ <br> Text2MindMap <br> http://www.text2mindmap.com/ <br> Youtube <br> http://www.youtube.com/ <br> Socrative <br> http://socrative.com/ |


| Immerse - Students | Immerse - Inquiry community | eduCanon <br> Brainstorm <br> Choose <br> Collaborate <br> Discuss <br> Exchange <br> Use prior knowledge |
| :--- | :--- | :--- |
| Build background <br> Collaborate <br> Connect to content <br> Converse <br> Discover interesting ideas <br> Evoke prior knowledge <br> Find third space | National Geographic Videos <br> http://video.nationalgeographic.com.au/ |  |
| TED-Ed |  |  |
| http://ed.ted.com/ |  |  |
| Youtube |  |  |
| http://www.youtube.com/ |  |  |


|  |  | Kidtopia <br> http://www.kidtopia.info/ <br> Mashpedia <br> http://www.mashpedia.com/ <br> Photobucket <br> http://beta.photobucket.com/ <br> Quintura for kids <br> http://quinturakids.com/ <br> Search-cube <br> http://search-cube.com/ <br> Simple Wikipedia <br> http://simple.wikipedia.org/wiki/Main Page <br> SlimeKids <br> http://www.slimekids.com/search-engines/ <br> WikiSummarizer <br> http://www.wikisummarizer.com/ |
| :---: | :---: | :---: |
| Identify - Students <br> Chart <br> Choose <br> Experiment with search terms <br> Formulate inquiry question <br> Hypothesise <br> Investigate <br> Journal: Reflect on learning, take notes <br> Log - Keep bibliographic details <br> Plan <br> Search widely <br> Suggest | Identify - Inquiry community <br> Identify inquiry question Collaborate Converse Decide direction Form a focus Frame inquiry process Pause and ponder Question focus formulation Think/Pair/Share | Knowledge Compass http://knowledgecompass.weebly.com/ |


| Gather - Students <br> Capture <br> Chart <br> Classify <br> Collect <br> Compare <br> Compose <br> Comprehensive searching <br> Evaluate <br> Locate <br> Measure <br> Organise <br> Record <br> Retrieve <br> Select <br> Summarise | Gather - Inquiry community <br> Cluster ideas <br> Collect detailed information from a variety of sources <br> Gather important information <br> Go broad <br> Go deep | Bibme <br> http://www.bibme.org/ <br> Compfight <br> http://compfight.com/ <br> Diigo <br> http://www.diigo.com/ <br> Easybib: <br> www.easybib.com <br> Evernote <br> http://evernote.com/ <br> Kaboompics <br> http://kaboompics.com <br> Lino <br> http://en.linoit.com/ <br> Netvibes <br> http://www.netvibes.com/en <br> Pearltree <br> http://www.pearltrees.com/ <br> Padlet <br> http://padlet.com/ <br> Photobucket <br> http://beta.photobucket.com/ <br> Pics4Learning <br> http://www.pics4learning.com/ <br> Polldaddy <br> http://polldaddy.com/ <br> QR codes <br> http://arcode.kaywa.com/ <br> Scooplt <br> http://www.scoop.it/ <br> sitehoover <br> http://www.sitehoover.com/en/ |
| :---: | :---: | :---: |


|  |  | Spiderscrib <br> http://www.spiderscribe.net/ <br> Survey Monkey <br> http://www.surveymonkey.com/ |
| :---: | :---: | :---: |
| Create / Share - Students <br> Articulate <br> Build <br> Categorise <br> Chart <br> Choose <br> Combine <br> Communicate <br> Compose <br> Conclude <br> Construct <br> Create <br> Design <br> Develop <br> Draw <br> Exchange <br> Experiment <br> Format <br> Infer <br> Integrate <br> Interpret <br> Invent <br> Make <br> Organise <br> Present <br> Produce <br> Represent <br> Sequence | Create / Share - Inquiry community <br> Create to communicate Go beyond facts to make meaning Learn from each other Reflect on learning Share learning Tell their story | Animoto <br> http://animoto.com/ <br> Audacity <br> http://audacity.sourceforge.net/ <br> AudioBoo <br> http://audioboo.fm/ <br> Blabberize <br> http://blabberize.com/ <br> Blogger <br> http://www.blogger.com/ <br> Bookbuilder <br> http://bookbuilder.cast.org/ <br> Canva <br> https://www.canva.com/ <br> easel.ly <br> http://www.easel.ly/ <br> Flipboard <br> https://flipboard.com <br> Glogster <br> http://edu.glogster.com/ <br> GoAnimate for Schools <br> https://goanimate4schools.com/public ind ex <br> Haiku Deck <br> https://www.haikudeck.com/ <br> infogr.am <br> http://www.infogr.am/ <br> Issuu <br> http://issuu.com/ |


| Share <br> Simplify <br> Synthesise |  | Jing <br> http://www.techsmith.com/iing.html <br> Learnist <br> http://learni.st/ <br> Livebinders <br> http://www.livebinders.com/ <br> morgueFile <br> http://www.morguefile.com/archive <br> Ocenaudio <br> http://www.ocenaudio.com.br/ <br> PB Works <br> http://www.pbworks.com/ <br> Photo Peach <br> http://photopeach.com/ <br> Piktochart <br> http://piktochart.com/ <br> Pixton <br> http://www.pixton.com/schools/overview <br> Podbean <br> http://www.podbean.com/ <br> PosterMaker App <br> https://itunes.apple.com/ca/app/id4235745 <br> 89?mt=8 <br> Prezi <br> http://prezi.com/ <br> PresentationTube <br> http://presentationtube.com/ <br> Scribe <br> http://www.scribd.com/ <br> Smilebox Teacher’s Toolbox http://media.smilebox.com/teachers/welco me |
| :---: | :---: | :---: |


|  |  | Smore for educators <br> https://www.smore.com/educators <br> Stormboard <br> http://stormboard.com/ <br> Storyboard generator <br> http://generator.acmi.net.au/storyboard <br> Tagul <br> http://tagul.com/ <br> Twiddla <br> http://www.twiddla.com/ <br> Vimeo <br> http://vimeo.com/ <br> Voki <br> http://www.voki.com/ <br> Weebly for education <br> http://education.weebly.com/ <br> Wikispaces <br> http://www.wikispaces.com/ <br> Wordle <br> http://www.wordle.net/ <br> WordPress <br> https://wordpress.com/ <br> xtranormal <br> http://www.xtranormal.com/ |
| :---: | :---: | :---: |
| Evaluate - Student <br> Assess <br> Check <br> Critique <br> Evaluate <br> Feedback <br> Improve <br> Peer assess | Evaluate - Inquiry community <br> Celebrate and showcase learning Converse <br> Evaluate achievement of learning goals Reflect on content Reflect on process | Edmodo <br> http://www.edmodo.com/ <br> Kaizena <br> https://kaizena.com/ <br> iRubric <br> http://www.rcampus.com/indexrubric.cfm <br> Penzu classroom <br> http://penzu.com/content/products/classro om |


| Reflect |  | Socrative <br> Self-assess <br> Suggest <br> Test |
| :--- | :--- | :--- |
| http://socrative.com/ |  |  |
| Stoodle |  |  |
| http://stoodle.ck12.org/ |  |  |

