FOREST LEARNING

SHE MAPS

DRONES IN FORESTRY

ASSESSMENT RUBRICS

Years 5-6

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All units of work designed and created by She Maps are linked to the Australian Curriculum across multiple learning areas both inside and outside the STEM-identified subjects.

By using these programs you help to equip your students with the necessary STEM skills and knowledge that will enable them to engage with the careers of the future.

Working in collaboration with schools we set out to achieve the five strategies of action outlined in the Australian STEM education strategy.

This includes:

1. Increasing student STEM ability, engagement, participation, and aspiration
2. Increasing teacher capability and STEM teaching quality
3. Supporting STEM education opportunities within school systems
4. Facilitating effective partnerships with tertiary education providers, business and industry
5. Building a strong evidence base.

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ASSESSMENT RUBRIC YEARS 5 – 6

STUDENT NAME:

ASSESSABLE ELEMENT	ABOVE STANDARD	AT STANDARD	BELOW STANDARD
DIGITAL TECHNOLOGIES (YEARS 5 - 6)			
explain the fundamentals of digital system components (hardware, software and networks) and how digital systems are connected to form networks	**Module 2** explain with considered detail how a digital system is used in forestry and is made up of hardware, software and is networked to share information with a range of forestry workers	**Module 2** explain how a digital system used in forestry is made up of hardware, software and is networked to share information with forestry workers	**Module 2** make statements about a digital system used in forestry
define problems in terms of data and functional requirements	**Module 4** define problems from a forest challenge in terms of collecting considered categorical data (e.g. number of different types of trees and plants) with a drone **Module 5** define problems from an app challenge in terms of having to calculate distance and time to solve a simulation of different drone flight paths	**Module 4** define problems from a forest challenge to solve with data captured from a drone **Module 5** define problems from an app challenge to solve a simulation of different drone flight paths	**Module 4** make general statements about problems from a forest challenge to solve with a drone **Module 5** make general statements about an app challenge to solve a simulation of different drone flight paths
design solutions by developing algorithms to address the problems *incorporate decision-making and repetition into their designs*	**Module 4** design efficient solutions to the drone challenge by developing well-constructed algorithms incorporating branching statements and repetition within effective control structures to navigate the simulated forest environment **Module 5** design efficient solutions to the app challenge by developing well-constructed algorithms incorporating branching statements, repetition, and variables within effective control structures to simulate drone flight paths	**Module 4** design solutions to the drone challenge by developing algorithms incorporating branching statements and repetition to navigate the simulated forest environment **Module 5** design solutions to the app challenge by developing algorithms incorporating branching statements and repetition to simulate drone flight paths	**Module 4** design fragmented solutions to the drone challenge by developing incomplete algorithms lacking branching statements and repetition to navigate the simulated forest environment **Module 5** design fragmented solutions to the app challenge by developing incomplete algorithms lacking branching statements and repetition to simulate drone flight paths
incorporate user interface design into their designs	**Module 5** reflect on the user traits and abilities and incorporate well considered user interface design into their app designs	**Module 5** consider the user and incorporate user interface design into their app designs	**Module 5** incorporate inaccessible user interface design into their app designs

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ASSESSABLE ELEMENT	ABOVE STANDARD	AT STANDARD	BELOW STANDARD
implement their digital solutions, including a visual program	**Module 4** construct algorithms with a visual program and complete effective and efficient drone mission **Module 5** construct algorithms with a visual program and create effective and complete app to simulate drone flight paths	**Module 4** construct algorithms with a visual program and complete drone mission **Module 5** construct algorithms with a visual program and create complete app to simulate drone flight paths	**Module 4** construct algorithms with a visual program and attempt drone mission with limited success **Module 5** construct algorithms with a visual program and create fragmented app to simulate drone flight paths
explain how their solutions meet needs and consider sustainability	**Module 5** explain and justify how their app meet needs of users and consider sustainability of the solution in terms of helping users understand the importance of gathering the most data in shortest amount of time	**Module 5** explain how their app meet needs of users and consider sustainability of the solution in terms of helping users understand the importance of gathering data	**Module 5** describe how their app could meet needs of users
manage the creation and communication of ideas and information in collaborative digital projects using validated data and agreed protocols	**Module 5** manage skilfully the creation and communication of ideas and information in collaborative digital projects using validated data from range of variables and using agreed protocols including technical (saving and retrieving app) and social protocols (effective group dynamics)	**Module 5** manage the creation and communication of ideas and information in collaborative digital projects using validated data from the distance variable and using agreed protocols including technical (saving and retrieving app) and social protocols (group dynamics)	**Module 5** manage the creation and communication of fragmented ideas and information in collaborative digital projects using limited validated data and using agreed protocols including technical (saving and retrieving app) and social protocols (group dynamics)
DESIGN AND TECHNOLOGIES (YEARS 5 AND 6)			
describe competing considerations in the design of environments, taking into account sustainability	explain competing considerations in the design of forest environments, taking into account sustainability of the timber industry	describe competing considerations in the design of forest environments, taking into account sustainability of the timber industry	list some considerations in the design of forest environments
describe how design and technologies contribute to meeting present and future needs	explain how bar codes, optimisers, GPS trackers and drones contribute to meeting present and future needs of fo	describe how bar codes, optimisers, GPS trackers and drones contribute to meeting present and future needs of foresters and consumers	list some facts about equipment used in the forestry industry
explain how the features of technologies impact on designed solutions	explain and justify how the features of optimisers and drones impact on the design of forests including layout of stands of trees	explain how the features of optimisers and drones impact on the design of forests including layout of stands of trees	describe how the features of equipment impact forests

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ASSESSABLE ELEMENT	ABOVE STANDARD	AT STANDARD	BELOW STANDARD
HASS – YEAR 5			
describe the significance of developments in bringing about change	identify and describe the significance of developments in technologies in bringing about change in forestry	describe the significance of developments in technologies in bringing about change in forestry	list some developments in technologies in forestry
describe aspects of the past that have remained the same.	describe and explain why aspects of the past have remained the same in forestry.	describe aspects of the past that have remained the same in forestry.	list aspects of the past that have remained the same in forestry.
describe the experiences of different people in the past.	describe and explain the experiences of loggers including the Lynch sisters, bullocky drivers, and sawmill operators in the past	describe the experiences of the Lynch sisters, bullocky drivers and sawmill operators in the past	list some experiences of the Lynch sisters, bullocky operators, or sawmill operators in the past
identify and describe the interconnections between components of environments *identify the effects of these interconnections on the characteristics of environments*	explain the interconnections between components of the forestry environment and explain the effects of these interconnections on the characteristics of the forest environment	identify and describe the interconnections between components of the forestry environment and identify the effects of these interconnections on the characteristics of the forest environment	list limited interconnections between components of the forestry environment and list limited effects of these interconnections on the characteristics of the forest environment
develop questions for an investigation	develop considered questions for an investigation Sarah Maddison and how she responds to managing her work in forestry	develop appropriate questions for an investigation about Sarah Maddison and how she responds to managing her work in forestry	suggest limited questions for an investigation about Sarah Maddison and how she responds to managing her work in forestry
locate, collect and organise data and information from a range of sources to answer inquiry questions	locate, collect and organise detailed data and information from a range of sources including the story map to answer inquiry questions about forestry in the past, modern forestry and to create an informed biography of Sarah Maddison	locate, collect and organise data and information from a range of sources including the story map to answer inquiry questions about forestry in the past, modern forestry and to create a biography of Sarah Maddison	locate, collect and organise limited data and information from the story map to answer limited inquiry questions about forestry in the past, modern forestry and to create a biography of Sarah Maddison
interpret data to identify and describe simple patterns and trends	interpret maps, geographical data and other information to explain patterns and trends in forestry during Australia's past	interpret maps, geographical data and other information to identify and describe simple patterns and trends in forestry during Australia's past	nterpret maps, geographical data and other information to make statements about simple patterns and trends in forestry during Australia's past
sequence information about events, the lives of individuals and selected phenomena in chronological order using timelines	sequence detailed information about transportation methods in forestry in chronological order using a timeline	sequence information about transportation methods in forestry in chronological order using a timeline	sequence limited information about transportation methods in forestry in chronological order using a timeline
sort, record and represent data in different formats, including large-scale and small-scale maps, using basic conventions	represent detailed data and the precise location of the forests Sarah Maddison works in and their characteristics in graphic forms for the biography	represent data and the location of the forests Sarah Maddison works in and their characteristics in graphic forms for the biography	represent limited data about the forests Sarah Maddison works in for the biography
present findings and ideas using geographical terminology in a range of communication forms	present detailed findings and ideas using geographical terminology in a range of communication forms to present a well-constructed biography of Sarah Maddison	present findings and ideas using geographical terminology in a range of communication forms to present the biography of Sarah Maddison	present fragmented findings and ideas using limited geographical terminology to present the biography of Sarah Maddison

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ASSESSABLE ELEMENT	ABOVE STANDARD	AT STANDARD	BELOW STANDARD
HASS – YEAR 6			
identify and describe continuities and changes for different groups in the past and present	explain the describe the continuities and changes for loggers and sawmill operators in forestry	Identify and describe the continuities and changes for loggers and sawmill operators in forestry	list some continuities or changes for loggers or sawmill operators in forestry
describe the causes and effects of change on society	identify and describe the causes and effects of change on forestry workers and townships	describe the causes and effects of change on forestry workers and townships	list some causes and effects of change on forestry workers and townships
compare the experiences of different people in the past	compare and explain the experiences of loggers including the Lynch sisters, bullocky drivers, and sawmill operators in the past	compare the experiences of the Lynch sisters, bullocky drivers and sawmill operators in the past	list some experiences of the Lynch sisters, bullocky operators, or sawmill operators in the past
develop appropriate questions to frame an investigation	develop considered questions for an investigation Sarah Maddison and how she responds to managing her work in forestry	develop appropriate questions for an investigation about Sarah Maddison and how she responds to managing her work in forestry	suggest limited questions for an investigation about Sarah Maddison and how she responds to managing her work in forestry
locate, collect and organise useful data and information from primary and secondary sources	locate, collect and organise detailed data and information from primary and secondary sources including the story map to answer inquiry questions about forestry in the past, modern forestry and to create an informed biography of Sarah Maddison	locate, collect and organise data and information from primary and secondary sources including the story map to answer inquiry questions about forestry in the past, modern forestry and to create a biography of Sarah Maddison	locate, collect and organise limited data and information from the story map to answer limited inquiry questions about forestry in the past, modern forestry and to create a biography of Sarah Maddison
record and represent data and the location of places and their characteristics in different graphic forms	explain with precision, the location of forests and their characteristics using compass direction and distance in the biography	describe the location of forests and their characteristics using compass direction and distance in the biography	make statements about the location of forests in the biography
interpret data to identify, describe and compare patterns and trends	interpret maps, geographical data and other information to explain patterns and trends in forestry during Australia's past	interpret maps, geographical data and other information to identify and describe simple patterns and trends in forestry during Australia's past	interpret maps, geographical data and other information to make statements about simple patterns and trends in forestry during Australia's past
sequence information about events, the lives of individuals and selected phenomena in chronological order and represent time by creating timelines	sequence detailed information about transportation methods in forestry in chronological order using a timeline	sequence information about transportation methods in forestry in chronological order using a timeline	sequence limited information about transportation methods in forestry in chronological order using a timeline
organise and represent data in a range of formats, including large- and small-scale maps, using appropriate conventions	represent detailed data and the precise location of the forests Sarah Maddison works in and their characteristics in graphic forms for the biography	represent data and the location of the forests Sarah Maddison works in and their characteristics in graphic forms for the biography	represent limited data about the forests Sarah Maddison works in for the biography
present findings, in a range of communication forms that incorporate source materials, mapping, graphing, communication conventions and discipline-specific terms	present detailed findings and ideas using geographical terminology in a range of communication forms to present a well-constructed biography of Sarah Maddison	present findings and ideas using geographical terminology in a range of communication forms to present the biography of Sarah Maddison	present fragmented findings and ideas using limited geographical terminology to present the biography of Sarah Maddison

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ASSESSABLE ELEMENT	ABOVE STANDARD	AT STANDARD	BELOW STANDARD
MATHEMATICS – YEAR 5			
interpret different data sets	Interpret, describe, and classify different data sets about forests in Australia	interpret different data sets about forests in Australia	make fragmented statements about data sets about forests in Australia
measure and construct different angles	measure and construct different angles precisely in the drone flight-path simulation app	measure and construct different angles in the drone flight-path simulation app	construct angles with limited accuracy in the drone flight-path simulation app
pose questions to gather data, and construct data displays appropriate for the data	pose considered questions to gather data, and construct detailed and considered data displays for the data for the biography of Sarah Maddison	pose questions to gather data, and construct data displays appropriate for the data for the biography of Sarah Maddison	pose fragmented questions to gather data, and construct limited data displays for the biography of Sarah Maddison
MATHEMATICS – YEAR 6			
solve problems using the properties of angles	solve problems skilfully using the properties of angles in the drone flight-path simulation app	solve problems using the properties of angles in the drone flight-path simulation app	use properties of angles with limited accuracy in the drone flight-path simulation app
interpret secondary data displayed in the media	interpret and draw conclusions about secondary data displayed in the media about sawmills in the past when considering societal attitudes towards the forestry industry	interpret secondary data displayed in the media about sawmills in the past when considering societal attitudes towards the forestry industry	interpret secondary data displayed in the media with limited accuracy

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THANK YOU!

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We hope that you love our resources, and that you are excited for what we will release next! To see more She Maps resources check out our Teacher resources page.

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