

AGTA
Awards
Winner 2022



DRONES IN FORESTRY

ASSESSMENT RUBRICS

Years 9 - 10





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.





ASSESSMENT RUBRIC YEARS 9 – 10

STUDENT NAME:

ASSESSABLE ELEMENT	ABOVE STANDARD	AT STANDARD	BELOW STANDARD
DIGITAL TECHNOLOGIES – YEARS 9 - 10			
<i>explain the control and management of networked digital systems</i>	Module 1 explain comprehensively the control and flow of data including feedback loops in a networked digital system used in forestry	Module 1 explain the control and flow of data including feedback loops in a networked digital system used in forestry	Module 1 make statements about the control and flow of data in a networked digital system used in forestry
<i>explain the interaction between hardware, software and users</i>	Modules 1 & 2 explain comprehensively how forestry workers use digital systems with reference to interactions between hardware, software and users	Modules 1 & 2 explain how forestry workers use digital systems with reference to interactions between hardware, software and users	Modules 1 & 2 make statements about how forestry workers use digital systems
<i>explain why content data are separated from presentation</i>	Module 2 explain comprehensively why content data are separated from presentation when presenting website case study of a forestry worker	Module 2 explain why content data are separated from presentation when presenting website case study of a forestry worker	Module 2 make statements about why content data are separated from presentation when presenting website case study of a forestry worker
<i>plan and manage digital projects using an iterative approach</i>	Modules 2 & 3 comprehensively plan and manage digital projects including a website and drone mission using an iterative approach	Modules 2 & 3 plan and manage digital projects including a website and drone mission using an iterative approach	Modules 2 & 3 partially plan and manage fragmented digital projects including a website and drone mission
<i>define and decompose complex problems in terms of functional and non-functional requirements</i>	Module 2 purposefully define and decompose complex problems in terms of functional and non-functional requirements for website	Module 2 define and decompose complex problems in terms of functional and non-functional requirements for website	Module 2 partially define and decompose complex problems using fragmented logic in terms of requirements for website
<i>design and evaluate user experiences and algorithms</i>	Modules 2 & 3 purposefully design and comprehensively evaluate user experiences for the website and algorithms for the drone mission	Modules 2 & 3 design and evaluate user experiences for the website and algorithms for the drone mission	Modules 2 & 3 partially design and make statements about user experiences for the website and algorithms for the drone mission
<i>design and implement modular programs, using algorithms and data structures involving modular functions</i>	Module 3 purposefully design and implement efficient modular programs, using algorithms and data structures involving modular functions to make drone mission highly efficient	Module 3 design and implement modular programs, using algorithms and data structures involving modular functions to make drone mission as efficient as possible	Module 3 partially design and implement fragments of modular programs, using inefficient algorithms and data structures for drone mission
<i>test and predict results and implement digital solutions</i>	Module 3 systematically test and predict results and implement efficient code for drone mission	Module 3 test and predict results and implement code for drone mission	Module 3 partially test and predict fragmented results and partially implement inefficient code for drone mission



ASSESSMENT RUBRIC YEARS 9 – 10

STUDENT NAME:

ASSESSABLE ELEMENT	ABOVE STANDARD	AT STANDARD	BELOW STANDARD
DIGITAL TECHNOLOGIES – YEARS 9 - 10 (CONT')			
<i>evaluate information systems in terms of risk, sustainability and potential for innovation and enterprise</i>	Module 1 comprehensively evaluate information systems used in forestry in terms of risk, sustainability and potential for innovation and enterprise	Module 1 evaluate information systems used in forestry in terms of risk, sustainability and potential for innovation and enterprise	Module 1 describe information systems used in forestry
<i>share and collaborate online, establishing protocols for the use, transmission and maintenance of data and projects.</i>	Modules 1-3 proficiently share and collaborate online, establishing comprehensive and effective protocols for the use, transmission and maintenance of data and projects including research, website and drone mission	Modules 1-3 share and collaborate online, establishing protocols for the use, transmission and maintenance of data and projects including research, website and drone mission	Modules 1-3 partially share and collaborate online, using fragmented protocols for research, website and drone mission



ASSESSMENT RUBRIC YEARS 9 & 10

STUDENT NAME:

ASSESSABLE ELEMENT	ABOVE STANDARD	AT STANDARD	BELOW STANDARD
GEOGRAPHY – YEAR 9			
<i>explain how geographical processes change the characteristics of places</i>	Module 2 explain with considered reasoning how differing regions across New South Wales affect the characteristics of the forests that are managed by Mike Sutton	Module 2 explain how differing regions across New South Wales affect the characteristics of the forests that are managed by Mike Sutton	Module 2 list ways that differing regions across New South Wales affect the characteristics of the forests that are managed by Mike Sutton
<i>analyse interconnections between people, places and environments</i>	Modules 1 and 2 explain with considered reasoning how forestry workers use systems thinking to analyse environmental, economic and technical factors that influence timber production in Australia	Modules 1 and 2 explain how forestry workers use systems thinking to analyse environmental, economic and technical factors that influence timber production in Australia	Modules 1 and 2 list ways forestry workers use systems thinking to analyse limited factors that influence timber production in Australia
<i>explain how these interconnections influence people, and change places and environments</i>	Modules 1 and 2 explain with considered reasoning how consumer need for timber products influence sustainable forestry management practices considering environmental, economic and technical factors e.g. health of saplings, yield of mature forest and costs saved by using digital technologies including optimisers	Modules 1 and 2 explain how consumer need for timber products influence sustainable forestry management practices considering environmental, economic and technical factors e.g. health of saplings, yield of mature forest and costs saved by using digital technologies including optimisers	Modules 1 and 2 list examples of timber products that influence sustainable forestry management practices considering limited factors
GEOGRAPHY – YEAR 10			
<i>explain how interactions between geographical processes at different scales change the characteristics of places</i>	Modules 1 & 2 explain comprehensively how modern forestry practices change the characteristics of sustainable forests in different regions across Australia	Modules 1 & 2 explain how modern forestry practices change the characteristics of sustainable forests in different regions across Australia	Modules 1 & 2 list ways modern forestry practices change the characteristics of sustainable forests
<i>identify, analyse and explain significant interconnections between people, places and environments and explain changes that result from these interconnections and their consequences</i>	Modules 1 & 2 describe, analyse and explain comprehensively how forestry management utilises systems thinking to optimise production and manage environmental impact ensuring sustainable production of timber in Australia	Modules 1 & 2 identify, analyse and explain how forestry management utilises systems thinking to optimise production and manage environmental impact ensuring sustainable production of timber in Australia	Modules 1 & 2 list ways systems thinking might be used for production of timber in Australia
<i>evaluate alternative views on a geographical challenge and alternative strategies to address this challenge using environmental, economic, political and social criteria</i>	Modules 1 & 2 evaluate with considered reasoning how forestry workers assess and balance environmental, economic, political and social criteria to ensure the timber industry continues to be sustainable and socially responsible	Modules 1 & 2 evaluate how forestry workers consider environmental, economic, political and social criteria to ensure the timber industry continues to be sustainable and socially responsible	Modules 1 & 2 list ways forestry workers consider limited criteria to ensure the timber industry continues to be sustainable and socially responsible


ASSESSMENT RUBRIC YEARS 9 & 10
STUDENT NAME:

ASSESSABLE ELEMENT	ABOVE STANDARD	AT STANDARD	BELOW STANDARD
GEOGRAPHY – YEARS 9 & 10			
<i>use initial research to identify geographically significant questions to frame an inquiry</i>	Modules 1 and 2 use initial research to identify geographically significant and well-considered questions to frame an inquiry about digital systems in forestry	Modules 1 and 2 use initial research to identify geographically significant questions to frame an inquiry about digital systems in forestry	Modules 1 and 2 use initial research to identify limited questions to frame an inquiry about digital systems in forestry
<i>evaluate a range of primary and secondary sources to select and collect relevant and reliable geographical information and data</i>	Modules 1 and 2 evaluate with considered reasoning a range of primary and secondary sources to select and collect relevant and reliable geographical information and data about how digital systems are used in the timber industry considering emerging technologies	Modules 1 and 2 evaluate a range of primary and secondary sources to select and collect relevant and reliable geographical information and data about how digital systems are used in the timber industry	Modules 1 and 2 access primary and secondary sources to collect geographical information and data about how digital systems are used in the timber industry
<i>use a range of methods and digital technologies to interpret and analyse maps, data and other information to propose explanations for patterns, trends, relationships and anomalies across time and space, and to predict outcomes</i>	Module 2 use a range of methods and digital technologies to interpret and analyse maps, data and other information to propose and justify explanations and to predict outcomes for continued use of digital systems in a sustainable forestry industry considering emerging technologies	Module 2 use a range of methods and digital technologies to interpret and analyse maps, data and other information to propose explanations and to predict outcomes for continued use of digital systems in a sustainable forestry industry	Module 2 access maps, data and other information to propose ideas about continued use of digital systems in a sustainable forestry industry
<i>synthesise data and information to draw reasoned conclusions</i>	Module 2 synthesise a range of data and information to draw reasoned and well-considered conclusions about how digital systems including drones and GIS are used in the timber industry to make it more sustainable considering emerging technologies	Module 2 synthesise data and information to draw reasoned conclusions about how digital systems including drones and GIS are used in the timber industry to make it more sustainable	Module 2 draw fragmented conclusions about how digital systems including drones and GIS are used in the timber industry to make it more sustainable
<i>present findings, arguments and explanations using relevant geographical terminology and digital representations in a range of appropriate communication forms</i>	Module 2 present detailed findings, arguments and well-considered explanations about how digital systems are used by Mike Sutton using relevant geographical terminology and digital representations in a website and presentation	Module 2 present findings, arguments and explanations about how digital systems are used by Mike Sutton using relevant geographical terminology and digital representations in a website and presentation	Module 2 present how digital systems are used by Mike Sutton using digital representations in a website and presentation
<i>propose action in response to a geographical challenge, taking account of environmental, economic and social factors, and predict the outcomes and consequences of their proposal</i>	Module 3 propose well-considered action in response to a simulated forestry drone mission, taking account of environmental, economic and social factors, and predict the outcomes and consequences of their proposal considering emerging technologies	Module 3 propose action in response to a simulated forestry drone mission, taking account of environmental, economic and social factors, and predict the outcomes and consequences of their proposal	Module 3 propose limited action in response to a simulated forestry drone mission, taking account of limited factors

THANK YOU!



This unit of work has been brought to you by She Maps and was developed in partnership with ForestLearning. You can find out more about ForestLearning at forestlearning.edu.au

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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WHAT DO YOU NEED?

We're always looking for recommendations for topics or themes for drone and geospatial teaching resources. If you've got something in mind, then please email

programs@shemaps.com



AGTA Awards



Winner 2022

Category:
Digital/Online Resource

Resource:
Years 5-6 Drones in Forestry
Years 9-10 Drones in Forestry

Publisher:
ForestLearning and She Maps

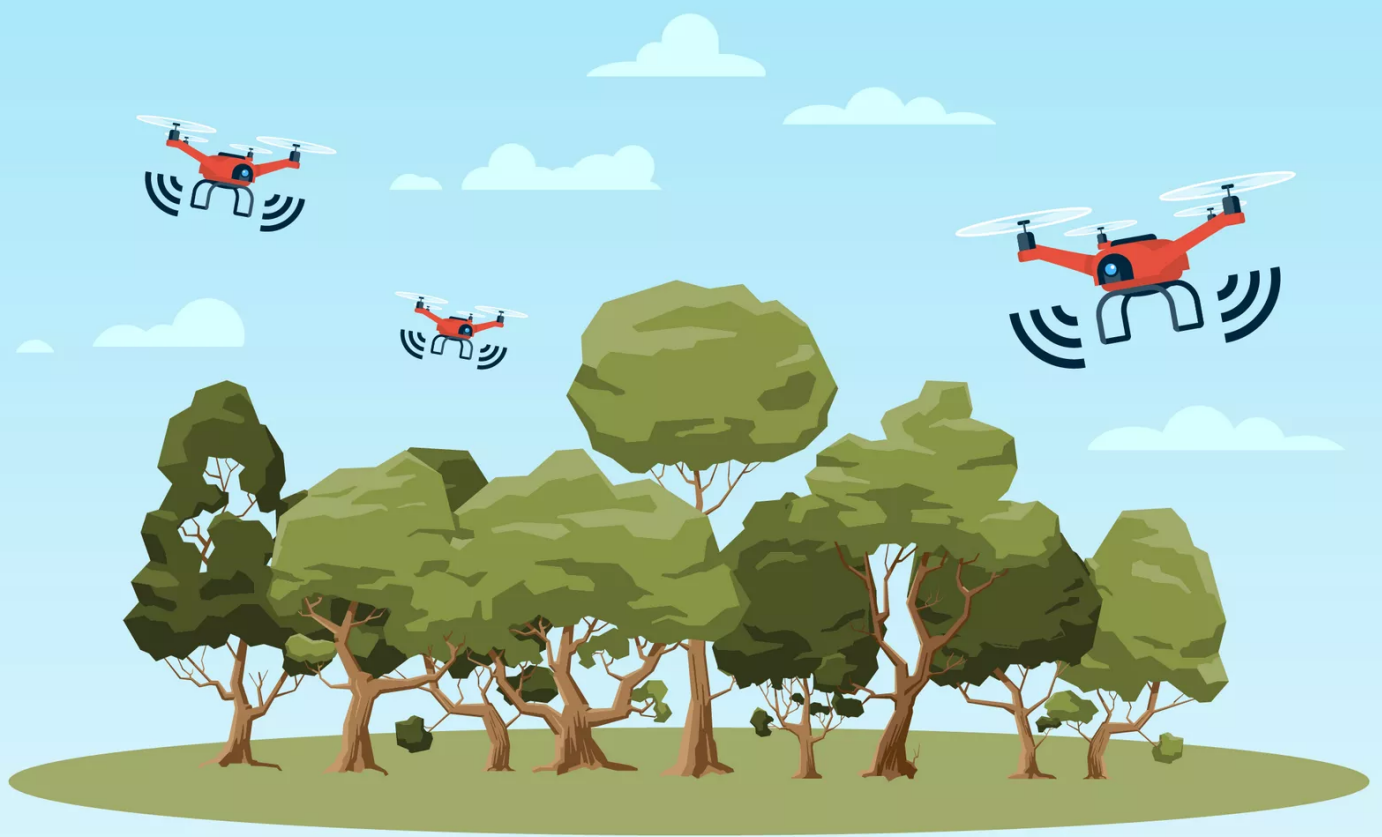
This certificate has been presented in recognition of the quality of the product in terms of its:

- ❖ currency
- ❖ authenticity
- ❖ application of contemporary understandings about how students learn
- ❖ the use of cutting-edge production, and
- ❖ contemporary and innovative style in supporting geographical education in Australian schools.

The ForestLearning and She Maps Drones in Forestry units dynamically engage with emerging technology for a contemporary learning experience for all students. The significant support and resourcing attached to the unit empowers teachers to implement contemporary geographic tools in their curriculum, underpinned by strong vocational links.

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Dr Susan Caldis
Chairperson of AGTA Board



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