

APS Data Capability Framework



Acknowledgments

The APS Data Professional Stream acknowledges and thanks Stats NZ for the use of their [Data Capability Framework](#). The APS Data Capability Framework has drawn upon this framework, with additional themes included and amendments made to align with the APS context and Data Professional Stream requirements.

We also thank our Project Working Group members from the following agencies who have been pivotal in developing this framework:

Australian Bureau of Statistics

Australian Taxation Office

Department of Foreign Affairs and Trade

Department of Health

Department of Social Services

Digital Transformation Agency

Geoscience Australia

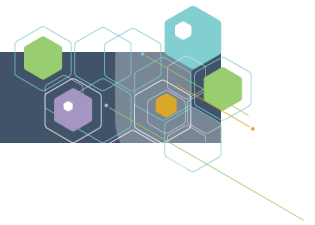
National Indigenous Australians Agency

Services Australia

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Foreword

Colleagues,

As Head of the Data Profession, I am pleased to introduce the APS Data Capability Framework.

This is an essential building block to supporting the Data Profession's work program. It establishes the language and structure we will use when defining data capabilities, as we continue to source, develop, and mobilise APS data expertise.

This is the first of several key products that together will provide the infrastructure to connect and integrate our initiatives.

This Framework is currently available as a beta version. Over the coming months it will be tested and used by agencies in a range of scenarios. This will help us refine the Framework to ensure it is a relevant and enduring product, for the Data Profession and the APS more widely.

Data proficiency is a critical enabler supporting the APS to deliver efficient, effective and responsive services to and for Australia.

This means all of us, whether we work in policy, regulatory, specialist or service delivery agencies, in data roles or not, have a responsibility to build and maintain the data capabilities required to perform our roles now, and into the future.

This Framework is a guide to better understanding the data capabilities related to a range of activities; from communicating with or about data, to performing exploratory data analysis. It is relevant to everyone in the APS who works with data in some way, from foundation through to advanced levels of expertise.

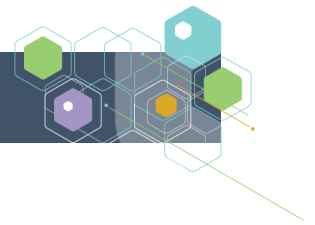
I would like to thank our colleagues in Stats NZ for providing a base upon which we could develop our Framework. I would also like to thank the people from our partner agencies who have contributed their expertise and perspectives to the Framework's development.

I hope you find the APS Data Capability Framework useful and call upon you to work with us by adopting it into your agencies and contributing to its development and improvement.

Dr David Gruen

Australian Statistician

Head of the Data Profession



Introduction

This guide outlines the 26 data capability areas defined in the APS Data Capability Framework. Each has capability indicators that span across three proficiency levels of foundation, intermediate and advanced.

Capability Areas:

1. Value organisational data as assets
2. Data communication
3. Improvement and Innovation – data processes/systems and tools/products
4. Data governance
5. Data availability
6. Data access
7. Sourcing and use of administrative data
8. Data collection
9. Subject matter expertise
10. Identify research questions
11. Data outputs, products or services
12. Data collection methodology
13. Data integrity and quality assurance
14. Statistical concepts and methodologies
15. Data and information management
16. Data classification
17. Integrate data
18. Data editing
19. Metadata – Describe and summarise data
20. Data use and re-use
21. Data processing methodology
22. Exploratory data analysis
23. Visualise data
24. Statistical data analysis
25. Specialist data analysis
26. Business intelligence data analysis

Proficiency Level Definitions

Advanced

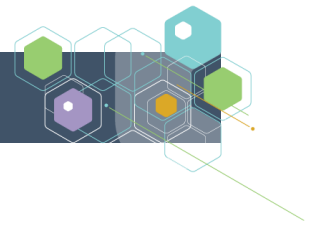
- *Demonstrates an extensive understanding and application of concepts and techniques*
- *Guides on precedents and/or industry standards; shapes the organisation's approach in the application of this skill/knowledge area*
- *Sets, leads, designs, innovates, implements, monitors, regulates, develops others*

Intermediate

- *Demonstrates a broad understanding of concepts and techniques with experience in applying*
- *Demonstrates the skill/knowledge with minimal guidance in normal situations*
- *Influences, upholds, shares advice, consults*

Foundation

- *Basic awareness of concepts and techniques*
- *Follows guidance, complies with established procedures, seeks advice.*



Navigating the Framework

The Framework can be reviewed in two ways:

1. Referring to the complete list of capabilities, or
2. Filtering the capabilities by data lifecycle category.

Note: The [Framework's Data Lifecycle View](#) assists with filtering by category, and is particularly helpful when identifying data capabilities relevant to a role or data-related task.

Data Lifecycle Categories

Plan

The processes and resources are mapped out for the lifecycle of the data. The project's goals are stated, and a full data management plan is created.

Collect

Data is gathered or generated by the individuals/ organisation wanting to use it.

Describe

The data is accurately described using the appropriate metadata standards.

Store

The data is stored in a digital repository, is made secure and reusable. This often very quickly follows collection.

Prepare

The data is prepared, made ready for analysis and use.

Analyse and Use

The data is analysed and used for the purpose for which it was collected or generated and reused for additional value.

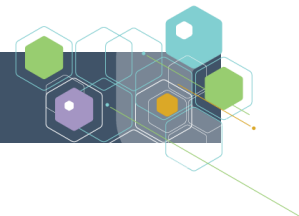
Save / Destroy

Actions are taken to safeguard the long-term viability and availability of the data.



The Data Lifecycle View

	⇌ PLAN	📁 COLLECT	📄 DESCRIBE	📥 STORE	📧 PREPARE	🔍 ANALYSE & USE	🗑️ SAVE / DESTROY
1. Value organisational data as assets.....	✓	✓	✓	✓	✓	✓	✓
2. Data communication	✓	✓	✓	✓	✓	✓	✓
3. Improvement and Innovation - Data processes/systems and tools/products	✓	✓	✓	✓	✓	✓	✓
4. Data governance	✓	✓	✓	✓			✓
5. Data availability	✓	✓					
6. Data access.....	✓	✓					
7. Sourcing and use of administrative data	✓	✓	✓			✓	
8. Data collection.....	✓	✓					
9. Subject matter expertise	✓	✓	✓		✓	✓	
10. Identify research questions	✓	✓				✓	✓
11. Data outputs, products or services.....	✓					✓	
12. Data collection methodology		✓					
13. Data integrity and quality assurance.....		✓	✓	✓	✓	✓	
14. Statistical concepts and methodologies		✓	✓	✓	✓	✓	✓
15. Data and information management.....		✓	✓	✓	✓	✓	✓
16. Data classification.....			✓	✓	✓	✓	✓
17. Integrate data			✓		✓	✓	
18. Data editing			✓	✓	✓		
19. Metadata - Describe and summarise data			✓	✓	✓	✓	✓
20. Data use and re-use.....			✓	✓		✓	✓
21. Data processing methodology.....					✓		
22. Exploratory data analysis					✓	✓	
23. Visualise data					✓	✓	
24. Statistical data analysis.....						✓	
25. Specialist data analysis						✓	
26. Business intelligence data analysis.....						✓	



1. Value organisational data as assets

Understanding the value and use of data and treating organisational data accordingly. This includes drawing insights from data for evidence-based decisions and recommendations.

Advanced

- *Has a comprehensive understanding of the data assets available to the organisation and understands how these assets contribute strategic value.*
- *Looks for new ways to obtain value from organisational data assets.*
- *Can advise how organisational data assets contribute value in broader data contexts.*
- *Is an expert resource on the broader and strategic environment when drawing insights from data. Uses this expertise to make informed, evidence-based decisions and recommendations and act accordingly.*

Intermediate

- *Has extensive knowledge of the organisation's data assets, including a comprehensive understanding of how their fitness for purpose translates to value for the organisation.*
- *Promotes opportunities for using data to support decision making, advice and research.*
- *Considers the broader environment and context when drawing or interpreting insights from data. Uses these insights to make informed, evidence-based decisions and recommendations, and act accordingly.*

Foundation

- *Is familiar with organisational data assets relevant to their work.*
- *Understands how those assets contribute value to the organisation.*
- *Actively looks for opportunities to use data to support decision making, advice and research.*
- *Uses insights from data to make informed, evidence-based decisions and recommendations, and act accordingly.*

Associated Categories



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2. Data Communication

Effectively communicating with data or about data with a range of audiences.

- Advanced**
- Can develop and deliver advanced level narrative to communicate insights drawn from complex data sources and outputs.
 - Maintains understanding of new trends and innovations relating to data communication (including Artificial Intelligence-based technologies) and develops skills in these where relevant.
 - Understands the importance of translating technical concepts into non-technical language and can adapt communication effectively for a range of audiences.
 - Can use innovative approaches to improve the process of summarising data into meaningful narratives.
 - Uses high quality analytics and visualisation to communicate insights from data.
 - Can effectively listen to technical and business stakeholders and understand and interpret their data needs.

- Intermediate**
- Can develop and deliver effective narrative to communicate insights drawn from a range of data sources and outputs.
 - Can comfortably question data and results they are presented, and answer technical questions relating to their data, relevant to the audience.
 - Can communicate effectively between technical and non-technical experts across data production, management, or use, including clients, managers and data professionals.
 - Can effectively communicate the relationship between the data and the context in which it is used.

- Foundation**
- Can develop and deliver a simple narrative to communicate insights related to their data.
 - Can ask and answer a range of questions relating to their data, relevant to the audience.
 - Can communicate effectively with a range of stakeholders during data production, management, or use.

Associated Categories



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3. Improvement and innovation - Data processes/systems and tools/products

Identifying and implementing change to create efficiencies and new opportunities by making existing processes, systems, tools and products better and/or creating new ones.

- Advanced**
- *Thinks strategically to assess current processes/systems and tools/ products across a broad context.*
 - *Develops improvements where needed and encourages others to think critically about processes/systems and tools/ products relevant to them.*
 - *Advises those leading changes to processes / systems and tools/ products, measures resultant benefits, and makes recommendations.*
 - *Understands the impact of new trends and innovations on organisational data processes, systems and tools, and products.*
 - *Maintains understanding of new trends and innovations relating to data processes, systems and tools, and products within the organisation and externally.*
 - *Provides technical expertise for systems testing, including validating the quality of the testing approach and results.*

- Intermediate**
- *Can identify deficiencies in current processes/systems and tools/ products, gain the required approval to make changes, and lead the implementation of those changes.*
 - *Can identify and harness opportunities to create efficiencies and effective new processes/systems and tools/products.*
 - *Can develop a test scenario and lead systems testing, following organisational procedures and protocols and analyse the results.*

- Foundation**
- *Can identify a successful process system or tool/process/product.*
 - *Can identify deficiencies in current processes/ systems or tools/products.*
 - *Can support systems testing under guidance and following test plans.*

Associated Categories



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4. Data governance

Developing and/or implementing a collection of practices and processes, which help ensure the formal management of data assets within an organisation.

- Advanced**
- *Is an expert resource in data governance and can formulate and advise on data governance policies and contribute to the structure of organisational data governance frameworks (includes data access, data security, privacy and ethics).*
 - *Represents a point of contact for data governance leads in other organisations.*
 - *Maintains awareness of new legislative requirements and trends that impact good data governance and ensures organisational compliance with these (includes data access, data security, privacy, and ethics).*
 - *Can provide data governance thought leadership across broader data use contexts.*

- Intermediate**
- *Can contribute to the creation of internal policies in support of data governance in alignment with current legislative and organisational requirements (includes data access, data security, privacy, and ethics).*
 - *Can educate others in the importance of good governance practice.*

- Foundation**
- *Is aware of and understands implications of data governance frameworks and policies and the relevant legislative requirements that underpins them (includes data access, data security, privacy, and ethics).*
 - *Knows where to obtain advice on governance as required.*

Associated Categories



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5. Data availability

Identifying existing and new data sources that can be accessed and used.

- Advanced**
- *Is an expert resource for seeking out new sources of data or identifying new ways of using existing sources of data.*
 - *Researches new techniques to assess data availability.*
 - *Provides expertise in techniques to evaluate possible new sources of data.*

- Intermediate**
- *Can identify and evaluate internal and external sources of data, including understanding any limitations and gaps.*
 - *Can use suitable techniques to evaluate new sources of data.*



Foundation

- *Is aware of available data (both internal and external).*
- *Is aware that data has limitations and gaps and seeks support in evaluating this if needed.*

Associated Categories



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6. Data access

Obtaining or retrieving data.

Advanced

- *Can mitigate issues arising from different access approaches.*
- *Can provide actionable strategic advice on data access.*
- *Can make and justify recommendations for data access.*

Intermediate

- *Has a comprehensive knowledge of protocols associated with data access.*

Foundation

- *Can use the range of available options to access common data sources.*

Associated Categories



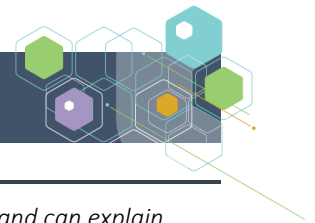
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7. Sourcing and use of administrative data

Obtaining and using information which is collected by government departments businesses and other organisations for a range of reasons such as registrations, sales and record keeping.

Advanced

- *Is knowledgeable about multiple sources of administrative data.*
- *Provides expertise to identify new sources of administrative data as well as uses for that data.*
- *Maintains understanding of new trends and innovations relating to sourcing of administrative data (including Artificial Intelligence-based technologies) and develops capabilities in these where relevant.*
- *Can advise how the data has been used to produce new insights.*
- *Can write custom scripts and code (programming language) to source and combine administrative data.*



Intermediate

- *Is knowledgeable about various sources of administrative data and can explain their limitations.*
- *Can assess the utility of different sources of administrative data for a particular purpose.*
- *Has a strong understanding of the advantages and disadvantages of using administrative data, including in relation to survey data.*
- *Understands and can amend existing code (programming language) to source and combine administrative data.*

Foundation

- *Is aware of the data obtained from administrative sources and the use of administrative data.*
- *Knows where to obtain advice about administrative data sources and use as required.*
- *Understands what administrative data is, including its benefits and limitations.*

Associated Categories



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8. Data collection

Gathering and measuring data on variables of interest, in an established and systematic fashion.

Advanced

- *Is an expert resource in all aspects of data collection, including why data is collected and the roles associated with collection.*
- *Can write custom scripts and code (programming language) to collect data.*
- *Can make justifiable decisions about how data is collected.*

Intermediate

- *Has a comprehensive knowledge of the full range of data collection options, including costs and benefits.*
- *Is able to understand and amend existing code (programming language) to collect data.*
- *Knows how to mitigate issues arising from different collection modes.*

Foundation

- *Understands the role of data collection and the value propositions of different collection approaches.*
- *Can collect data by following established processes, using the systems and tools provided.*

Associated Categories



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9. Subject matter expertise

Applying knowledge and expertise in a specific subject, area, or program.

Advanced

- *Is an expert resource on the subject matter area associated with data use, including understanding, and influencing the effective use of the data within that subject matter area and the relationship between that use and other data use contexts.*

Intermediate

- *Has a comprehensive knowledge of the subject matter area associated with the data use and can readily identify the parameters of the subject matter that influence the use of the data.*

Foundation

- *Has a general understanding of the subject matter area associated with data use (e.g., small business, healthcare, rural sector, etc).*

Associated Categories



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10. Identify research questions

Determining questions that enable a topic of interest to be investigated through qualitative and quantitative research.

Advanced

- *Uses a range of techniques to assess data needs and identify gaps, towards the formulation of appropriate research questions.*

Intermediate

- *Can identify and structure relevant research questions for specific needs and develop the approach and specific measures to resolve those questions.*

Foundation

- *Can formulate research questions with guidance and consider the appropriate approaches and measures to resolve those questions.*

Associated Categories



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11. Data outputs, products, or services

Delivering data-related useable items and services.

- Advanced**
- *Has expert knowledge about the production of a data output, product or service.*
 - *Provides expertise in developing new products or data services to meet evolving requirements, needs and opportunities.*
 - *Can build the capability of others in the delivery of data outputs, products or services.*

- Intermediate**
- *Is responsible for the production of a data output, product, or service.*
 - *Can create data outputs or products and deliver data services in accordance with established processes and systems and can explain decisions made at all stages.*

- Foundation**
- *Is aware of the steps of the data output, product or data service and understands the decisions made at each of those steps.*
 - *Knows where to obtain advice on data outputs, products and/or services as required.*

Associated Categories



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12. Data collection methodology

The methods and standards relating to the collection of data.

- Advanced**
- *Is an expert resource on data collection methodology.*
 - *Can make justifiable recommendations to address data collection issues.*
 - *Maintains understanding of new trends and innovations relating to data collection methodology (including Artificial Intelligence-based technologies) and develops own capabilities in these where relevant.*

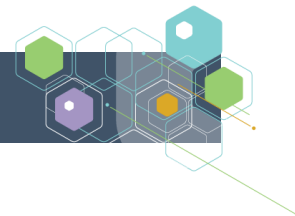
- Intermediate**
- *Has a comprehensive knowledge of relevant data collection methodologies.*
 - *Can make and justify recommendations of various modes of collection.*

- Foundation**
- *Is aware of relevant data collection methodologies.*
 - *Knows where to obtain advice on data collection methodologies as required.*

Associated Categories



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13. Data integrity and quality assurance

Applying measures and practices to ensure that data is fit for purpose. Includes data validation as well as ensuring data is not unintentionally changed along its lifecycle.

- Advanced**
- *Is an expert resource in the use of measures for data quality assurance, the interaction of those measures, and their application in conjunction with one another.*
 - *Can advise others on the use of data quality measures to make accurate assessments of data fitness-for purpose (including trustworthiness and accuracy).*
 - *Is an expert resource on ensuring data integrity across its lifecycle, and advises others.*

- Intermediate**
- *Can describe and produce data quality measures for the outputs they produce.*
 - *Has a comprehensive knowledge of relevant data quality measures and can use them to make accurate assessments of data fitness-for purpose (including trustworthiness and accuracy).*
 - *Has a comprehensive understanding of relevant data integrity principles and practices, and uses them to main integrity of organisational data.*

- Foundation**
- *Understands the concept of data quality and its importance.*
 - *Knows where to access data quality measures for the data they use.*
 - *Can follow guidelines and procedures to determine the trustworthiness and accuracy of the data they are using.*
 - *Can follow guidelines and procedures to maintain the integrity of the data they are working with.*

Associated Categories



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14. Statistical concepts and methodologies

Understanding and/or applying the methods and terms relating to statistical techniques.

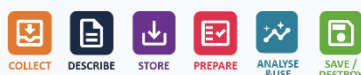
- Advanced**
- *Is an expert resource on statistical concepts and provides advice on the proper use of statistical methods.*
 - *Leads efforts to apply good statistical practice.*
 - *Can build capability of others in understanding and applying statistical concepts and methods.*



- Intermediate**
- *Has a comprehensive understanding of a wide range of statistical concepts, methodologies, and their appropriate application.*
 - *Can explain the proper use of a range of statistical concepts, methodologies to others.*

- Foundation**
- *Is familiar with statistical methodologies relevant for their work.*
 - *Maintains a basic understanding of the concepts underpinning the statistical methodologies relevant for their work.*

Associated Categories



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15. Data and information management

Gathering data and then analysing, categorising, contextualising, and maintaining it (and in some cases, destroying) as an organisational resource.

- Advanced**
- *Is an expert resource for implementing and shaping the organisation's strategic use of data and information management good practice, and can advise others. This includes requirements relating to data access, data security, privacy, and ethics.*
 - *Represents a point of contact for data and information management leads in other organisations.*

- Intermediate**
- *Has a comprehensive knowledge of the organisation's data and information management principles and guidelines and can apply them to support good data practice. This includes requirements relating to data access, data security, privacy and ethics.*
 - *Can advise others on the proper application of data and information management concepts.*

- Foundation**
- *Can access and comply with data and information management principles and associated guidelines. This includes requirements relating to data access, data security, privacy and ethics.*
 - *Knows where to obtain advice on the application of good data and information management practice.*
 - *Knows what data is and broadly what it can be used for.*

Associated Categories



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16. Data classification

Grouping a set of related categories in a meaningful, systematic, and standard format, e.g., country or region.

- Advanced**
- *Is an expert resource on data classifications and coding protocols and advises others.*
 - *Can employ conceptual frameworks in support of data classification and coding.*

- Intermediate**
- *Has a comprehensive knowledge of data classifications and coding protocols.*
 - *Knows where to obtain expert advice about coding and classifications where needed.*

- Foundation**
- *Is aware of relevant data classifications and coding protocols, and their proper application to data in general.*
 - *Knows who to consult for expert knowledge.*

Associated Categories



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17. Integrate data

Combining multiple datasets together to form a larger dataset, aiming to maximise the value of the data.

- Advanced**
- *Can perform and provide expert advice on data integration.*
 - *Can build capability of others in understanding and applying good data integration practice and principles.*
 - *Can write custom scripts and code (programming language) to integrate data.*
 - *Maintains understanding of new trends and innovations relating to integrating data (including Artificial Intelligence-based technologies) and develops skills in these where relevant.*

- Intermediate**
- *Can perform data integration using standard tools and can implement quality controls.*
 - *Knows where to obtain expert advice on data integration as needed.*
 - *Is able to understand and amend existing code (programming language) to integrate data.*
 - *Can assess datasets' suitability for linkage and extract appropriately prepared datasets.*



Foundation

- *Has a basic understanding of how data can be linked with other data.*
- *Understands what data integration is, including its benefits and limitations.*
- *Understands what types of data can be combined for analysis.*

Associated Categories



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18. Data editing

Checking data for consistency, errors and outliers, and correcting errors.

Advanced

- *Is an expert resource on different methods of data editing and advises others.*
- *Can assess current editing methods critically.*
- *Can build capability of others in data editing concepts and methods.*

Intermediate

- *Has a comprehensive knowledge of the different editing methods at their disposal.*
- *Understands why different methods are used and can describe the limitations of each method.*
- *Knows where to find expert advice about data editing as required.*

Foundation

- *Knows where to access relevant methods and understands the basics of those methods.*
- *Knows who to consult for expert knowledge.*
- *Can edit data following established guidelines and procedures.*

Associated Categories



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19. Metadata - Describe and summarise data

Defining and describing data to effectively manage and accurately interpret it. Includes Information about data, such as its size or creation date.

Advanced

- *Is an expert resource on metadata. Can establish standards for metadata and provide oversight and advice to others.*
- *Maintains knowledge of metadata best practice, including standards and applications.*
- *Can use a range of tools for storing and working with metadata. Keeps metadata refreshed and updated and can repair items that are incorrect or out of date.*



Intermediate

- Can use various summary options to effectively describe data and explain and justify those choices.
- Follows organisational standards and procedures relating to metadata creation, storage, and use.
- Can access metadata and use the descriptors to better understand existing data and effectively use it.

Foundation

- Understands there are different ways to summarise data and has a basic understanding of commonly used metadata options.
- Understands the concept of metadata, including its purpose and benefits.

Associated Categories



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20. Data use and re-use

Enabling data to be used for an immediate purpose, as well as appropriately re-used for alternative purposes.

Advanced

- Is a leading strategic adviser on the use of organisational data assets.
- Is an expert resource on the design and management of organisational data assets as open data. Promotes re-use and ongoing value of data across wider contexts, in accordance with legislative requirements and organisational guidelines (includes data sharing legislation).

Intermediate

- Understands and can articulate the value of data in terms of use and re-use.
- Implements a variety of techniques to ensure data is open and can be used beyond the specific purpose for which it was collected, in accordance with legislative requirements and organisational guidelines (includes data sharing legislation).

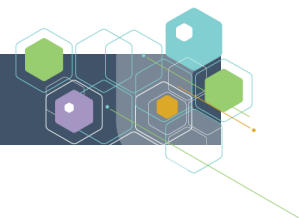
Foundation

- Understands the data they work with can be used more widely and is aware of relevant data sharing legislation.
- Is familiar with basic data sharing guidelines and organisational procedures to support the re-use of their data by others.

Associated Categories



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21. Data processing methodology

Understanding and/or applying statistical procedures used to deal with intermediate data and statistical outputs, e.g., weighting schemes, statistical adjustment, or methods for imputing missing values or source data.

-
- | | |
|---------------------|---|
| Advanced | <ul style="list-style-type: none">• <i>Is an expert resource on processing methodology and can assess it critically to identify improvements.</i>• <i>Can explain how processing methodology relates to the quality of data outputs.</i> |
| Intermediate | <ul style="list-style-type: none">• <i>Can make and justify suggestions for improvements in how data is processed.</i>• <i>Understands how processing methodology affects the quality of the outputs.</i> |
| Foundation | <ul style="list-style-type: none">• <i>Is aware of the proper processing methodology for the data being used and understands its application.</i>• <i>Knows where to obtain advice on processing methodology as required.</i> |
-

Associated Categories



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22. Exploratory data analysis

Analysing datasets to describe their main characteristics, e.g., the distribution of variables.

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- | | |
|---------------------|--|
| Advanced | <ul style="list-style-type: none">• <i>Is highly competent at performing exploratory analysis on large/complex datasets.</i>• <i>Can build capability of others in exploratory data analysis techniques.</i>• <i>Can write custom scripts and code in a programming language to conduct complex analytical tasks.</i>• <i>Maintains understanding of new trends and innovations relating to exploratory data analysis (including Artificial Intelligence-based technologies) and develops skills in these where relevant.</i> |
| Intermediate | <ul style="list-style-type: none">• <i>Can identify and implement suitable techniques and tools and assemble data visualisations for exploratory analysis on large/complex datasets.</i>• <i>Can validate unexpected results.</i>• <i>Is able to understand and amend existing code (programming language) to conduct exploratory data analysis.</i> |
| Foundation | <ul style="list-style-type: none">• <i>Can choose from data analysis techniques.</i>• <i>Can use (or learn how to use) appropriate analytical tools to investigate data.</i> |
-

Associated Categories



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23. Visualise data

Translating data into a visual context, including maps, charts and graphs, making data easier to interpret.

-
- | | |
|---------------------|---|
| Advanced | <ul style="list-style-type: none">• <i>Innovates the development of new approaches to, and options for, data visualisation, and can incorporate a range of techniques, including automation, interactivity, and animations.</i>• <i>Can advise others on data visualisations options and the best options to present data results.</i>• <i>Can build capability of others in creating and interpreting data visualisations.</i> |
| Intermediate | <ul style="list-style-type: none">• <i>Can readily produce a range of data visualisation outputs (including complex graphs and map visualisations) and can critically assess and enhance those produced by others.</i>• <i>Can select the most appropriate medium to visualise data.</i> |
| Foundation | <ul style="list-style-type: none">• <i>Can interpret basic data visualisations like standard charts and explain them to others.</i>• <i>Can create basic visualisations such as tables and graphs.</i> |
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Associated Categories

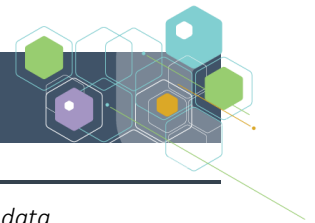


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24. Statistical data analysis

Analysing data using statistical measures and methods to produce informative statistics.

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|---------------------|--|
| Advanced | <ul style="list-style-type: none">• <i>Contributes to the development of new functionality for statistical analysis applications, which enables new ways of doing things.</i>• <i>Can write custom scripts and code in a statistical computing language to conduct complex analytical tasks.</i>• <i>Maintains understanding of new trends and innovations relating to statistical data analysis (including Artificial Intelligence-based technologies) and develops skills in these where relevant.</i> |
| Intermediate | <ul style="list-style-type: none">• <i>Can use specialist statistical applications for statistical models.</i>• <i>Is able to understand and amend existing code (programming language) to conduct analytical tasks.</i> |
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Foundation

- *Understands basic statistical measures and their application to data.*
- *Is aware of the analytical methodology being used in their work.*
- *Can conduct basic analysis on simple data.*

Associated Categories



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25. Specialist data analysis

Analysing data in specialist areas such as geospatial analysis and timeseries forecasting.

Advanced

- *Innovates in developing new methods in specialist areas (e.g., new approaches to time series forecasting or geospatial analysis).*
- *Can write custom scripts and code in a programming language to conduct complex analytical tasks.*
- *Maintains understanding of new trends and innovations relating to specialist data analysis (including Artificial Intelligence-based technologies) and develops skills in these where relevant.*

Intermediate

- *Can develop, fit, diagnose, and troubleshoot a model in a new data analysis scenario that requires a specialist method (e.g., time series forecasting or geospatial analysis).*
- *Is able to understand and amend existing code (programming language) to conduct specialist data analysis.*

Foundation

- *Understands the need for special data analysis methods and tools in some situations (e.g., time series forecasting or geospatial analysis).*
- *Is aware of the analytical methodology being used in their work.*

Associated Categories



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26. Business intelligence data analysis

Analysing data from business operations that inform the organisation's strategic and operational business decisions.

Advanced

- Exhibits expertise in multiple business intelligence applications.
- Can build capability of others in developing outputs using business intelligence applications.
- Can write custom scripts and code in a programming language to conduct complex analytical tasks.
- Maintains understanding of new trends and innovations relating to business intelligence data analysis (including Artificial Intelligence-based technologies) and develops skills in these where relevant.

Intermediate

- Can use business intelligence applications to create complex reports and dashboards.
- Is able to understand and amend existing code (programming language) to conduct business intelligence data analysis.

Foundation

- Can use common applications to generate basic analysis outputs like tables with calculations and static charts.
- Understands reports and dashboards created with business intelligence tools.
- Is aware of the analytical methodology being used in their work.
- Can conduct basic analysis on simple data.

Associated Categories



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