



# Survey of Research and Experimental Development Government and Private Non-Profit Organisations 2018-19

RDGS

In correspondence, please quote this number ▼

Australian Business Number

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Please correct any errors

### Purpose of Collection

The Research and Experimental Development (R&D) survey provides comprehensive data on Australia's R&D effort. This information is used by government and advisers to government, international organisations such as the Organisation for Economic Co-operation and Development, businesses, economists and others. The information is used for purposes such as policy formulation, allocation of funds and the determination of priorities for research and development.

### Collection Authority

The information asked for is collected under the authority of the *Census and Statistics Act 1905*. Your cooperation is sought in completing and returning this form by the due date.

### Confidentiality

Your completed form and personal information remain confidential to the Australian Bureau of Statistics.

### Due Date

Please complete this form and return it in the reply paid envelope to the Australian Bureau of Statistics by

### Help Available

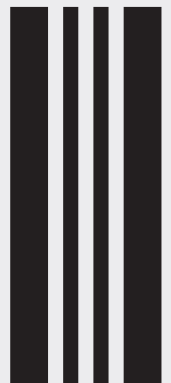
If you have problems in completing this form, or feel that you may have difficulties meeting the due date, please contact the Australian Bureau of Statistics by:

#### Telephone

1800 089 494  
Freecall (excluding mobile phones)

#### Mail

Australian Bureau of Statistics  
Reply Paid 91903  
Dandenong VIC 3175



### Australian Statistician

Person we should contact if any queries arise regarding this form

Name		Date		/		/	
Signature		Telephone					
Email							

## Please read this first

- **Important:** This form will be read using electronic equipment.
- Use **only black ball point pen** when completing this form.
- Keep each number, letter or tick within the data entry boxes provided, for example

or

- Leave answer boxes blank where you have no response or data to enter.
- Do not use 'nil', 'n/a' or draw a line in the data entry boxes.
- If a mistake is made, cross out the incorrect answer and either write the answer in the remaining boxes, for example

Expenditure ... .. \$   ,   , 000

or if not enough space is left, write next to the relevant item, for example

Expenditure ... ..     \$     , 000

- Information reported on this form should comply with the Australian equivalents to International Financial Reporting Standards (AIFRS).
- Report all expense items **exclusive of Goods and Services Tax (GST)** where this is recoverable as an input tax credit.
- If exact figures are not available, please provide careful estimates.
- Please report all monetary values in *thousands of Australian dollars (A\$'000)*. For example, report \$20,000 as 20. Where the value in the accounts of this organisation is not expressed in thousands of dollars, round the value to the nearest thousand dollars.
- The items listed under **Including** and **Excluding** are examples and should not be taken as a complete list of items to be included or excluded.
- You will need to report an estimate of time taken when you have completed this form.

Sample Only to the AFRS  
Do not return to the AFRS

**Part A – General information**

**1 Period covered by financial data on this form**

*Note*

- This form is for the financial year ended 30 June 2019.
- If this organisation has a different financial year, please report for a 12 month period which ends between 1 October 2018 and 30 September 2019 (e.g. a financial year ending 31 December 2018).

Tick one box

1 July 2018 - 30 June 2019 ... ..

1 January 2018 - 31 December 2018 ... ..

Other (please specify) ... ..

From / /  To / /

If the period covered by this form is not 12 months, please explain below  
(Please use BLOCK letters)

**2 Number of persons working for this organisation during the last pay period ending in June 2019**

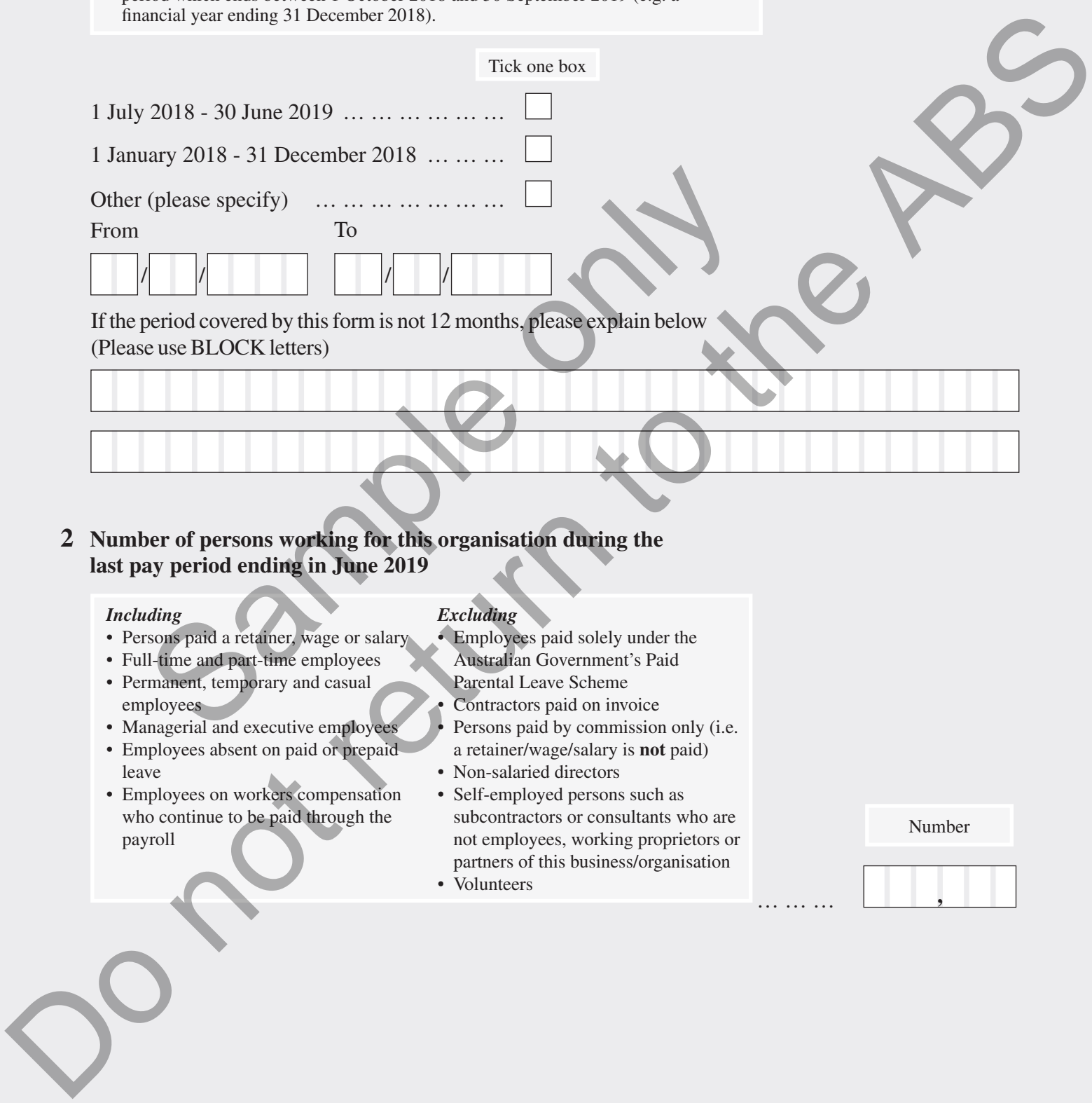
**Including**

- Persons paid a retainer, wage or salary
- Full-time and part-time employees
- Permanent, temporary and casual employees
- Managerial and executive employees
- Employees absent on paid or prepaid leave
- Employees on workers compensation who continue to be paid through the payroll

**Excluding**

- Employees paid solely under the Australian Government's Paid Parental Leave Scheme
- Contractors paid on invoice
- Persons paid by commission only (i.e. a retainer/wage/salary is **not** paid)
- Non-salaried directors
- Self-employed persons such as subcontractors or consultants who are not employees, working proprietors or partners of this business/organisation
- Volunteers

Number



# Definition of Research and Experimental Development (R&D)

## What is R&D?

Research and experimental development (R&D) comprise creative and systematic work undertaken in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge.

For an activity to be considered R&D, the activity must be:

- **novel** (aimed at new findings)
- **creative** (based on original, not obvious, concepts and hypotheses)
- **uncertain** (uncertain about the final outcome)
- **systematic** (planned and budgeted)
- **transferable and/or reproducible** (lead to results that could be possibly reproduced)

All five criteria are to be met, at least in principle, every time an R&D activity is undertaken.

**R&D performed by government and private not-for-profit organisations** is investigative work that has actual or potential use in the development of new or enhanced materials, products, devices, processes, systems or services.

## Examples of R&D

- Health and medical research, including clinical trial phases I, II and III
- Development of new survey methods, sampling methodologies, etc.
- Data collection, processing and interpretation which is conducted solely or primarily as part of an R&D project
- Research into and original development (or substantial modification) of computer software, such as new programming languages and new operating systems
- Construction and operation of pilot plants while still in the experimental phase and the primary purpose of operation is non-commercial
- ‘Feedback R&D’ directed at solving problems occurring beyond the original R&D phase, such as the resolution of technical problems arising in initial production runs
- Research work in the social sciences, arts and humanities

## Where does R&D end?

R&D ends when the work is no longer experimental, for example, when the material, product etc. is substantially developed and the primary objective is to:

- develop markets
- plan for pre-production and undertake pre-production activities (such as demonstration of commercial viability, tooling up and trial production runs)
- get production or control systems working smoothly

If the primary objective is to make further technical improvements, then the work is still R&D.

## Specific R&D excludes

Unless used primarily as part of (or for the support of) R&D projects, the following are excluded:

- **Clinical trial phases I, II and III which are part of a bigger R&D project managed by another business or organisation**
- Clinical trial phase IV
- Scientific and technical information services
- Policy related studies, management studies, efficiency studies and programme evaluations
- Consumer surveys, advertising, market research
- Routine quality control, testing and standardisation
- General purpose or routine data collection
- Feasibility studies
- Routine computer programming, systems maintenance or software application
- Commercial, legal and administrative aspects of patenting, copyrighting or licensing activities
- Activities associated with standards compliance
- Specialised routine medical care (e.g. routine pathology services)
- Purely R&D financing activities including management and distribution of grants

## Part B – R&D carried out by this organisation

### 3 Did this organisation carry out any R&D during the year ended 30 June 2019 or the equivalent financial period?

#### Definition

- **R&D carried out by this organisation** refers to any:
  - R&D activities performed by this organisation for this organisation
  - R&D projects, in their entirety, performed by this organisation on behalf of others (i.e. this organisation had full management of the projects and could control how they were undertaken)
  - R&D activities outsourced to others, that were part of a bigger R&D project managed by this organisation

#### Including

- Outsourced engineering, analytical work or other specialised services undertaken as part of R&D carried out by **this organisation**
- R&D performed as a **participant** in an unincorporated joint venture, including unincorporated Cooperative Research Centres (CRCs)

#### Excluding

- R&D projects funded by **this organisation**, but **not** performed by this organisation (i.e. the project, in its entirety, was outsourced and this organisation had no control over how the project was undertaken or managed)
- R&D activities performed by this organisation that were part of a bigger R&D project managed by **another business or organisation**

No   Go to **Part I**. Please provide reasons for nil R&D activity in Question 12.

Yes

### 4 Please provide a description of the R&D project(s) carried out by this organisation

Please use BLOCK letters

## Part C – Human resources devoted to R&D

### 5 For the following categories, please report the effort (in person years) devoted by this organisation to R&D during the year ended 30 June 2019 or the equivalent financial period

#### Note

- Only report the R&D effort of **employees** who were paid a retainer, wage or salary by this organisation.
- The following equation can be used to calculate person years of effort on R&D for **employees**: (Full-time equivalent) x (Portion of the employee's job spent on R&D) x (Portion of the year the employee spent on R&D) = Person years of effort.
- For example: a full-time employee spent 40% of their time on R&D for half the year. 1 person x 0.4 x 0.5 years = 0.2 person years of effort

#### Including

- Effort of employees who were involved in, or **directly** supported, R&D

#### Excluding

- Effort of contractors and self-employed persons such as consultants who are **not** employees of this organisation
- Effort of employees whose work **indirectly** supported R&D (e.g. executives and directors concerned primarily with budgets and human resources rather than project content; personnel officers)

#### (a) Researchers

##### Definition

- Researchers are professionals engaged in the conception or creation of new knowledge. They conduct research and improve or develop concepts, theories, models, techniques, instrumentation, software or operational methods.

##### Note

- Software developers or programmers; and executives and directors involved in the planning or management of scientific and technical aspects of R&D projects are also classified as researchers.

Person years  
(round to one decimal place)

 ,  . 

#### (b) Technicians directly supporting R&D

##### Definition

- Technicians and equivalent staff are persons whose main tasks require technical knowledge and experience in one or more fields of engineering, physical and life sciences, or social sciences, humanities and the arts. They participate in R&D by performing scientific and technical tasks involving the application of concepts, operational methods and use of research equipment, normally under the supervision of researchers.

##### Note

- Typical tasks of technicians may include: preparation and conduct of experiments or tests; carrying out bibliographic searches; recording measurements, making calculations and preparing charts and graphs.

Person years  
(round to one decimal place)

 ,  . 

#### (c) Other staff directly supporting R&D

##### Definition

- Other supporting staff includes skilled and unskilled craftsmen, and administrative, secretarial and clerical staff participating in R&D projects or directly associated with such projects.

##### Note

- Other supporting staff may include: secretarial and clerical staff working on, or directly associated with R&D activity; plant and machine operators.

Person years  
(round to one decimal place)

 ,  . 

#### (d) Total (sum of Questions 5(a), 5(b) and 5(c)) . . . . .

 ,  .









**Part E – Location of R&D expenditure**

**7 Please provide a breakdown of total R&D expenditure reported in Question 6(d) by the location(s) in which this organisation carried out R&D**

Report in (A\$'000)

(a) New South Wales .....	\$	<input type="text"/>	,	<input type="text"/>	,	<input type="text"/>	000
(b) Victoria.....	\$	<input type="text"/>	,	<input type="text"/>	,	<input type="text"/>	000
(c) Queensland .....	\$	<input type="text"/>	,	<input type="text"/>	,	<input type="text"/>	000
(d) South Australia .....	\$	<input type="text"/>	,	<input type="text"/>	,	<input type="text"/>	000
(e) Western Australia .....	\$	<input type="text"/>	,	<input type="text"/>	,	<input type="text"/>	000
(f) Tasmania .....	\$	<input type="text"/>	,	<input type="text"/>	,	<input type="text"/>	000
(g) Northern Territory .....	\$	<input type="text"/>	,	<input type="text"/>	,	<input type="text"/>	000
(h) Australian Capital Territory .....	\$	<input type="text"/>	,	<input type="text"/>	,	<input type="text"/>	000
(i) Overseas .....	\$	<input type="text"/>	,	<input type="text"/>	,	<input type="text"/>	000
(j) <b>Total</b> (equals the total in Question 6(d)) .....	\$	<input type="text"/>	,	<input type="text"/>	,	<input type="text"/>	000

Do not return to the ABS

**Part F – Source of R&D funds**

**8 Please provide a breakdown of total R&D expenditure reported in Question 6(d) by the following source(s) of funds**

*Note*

- Funding **not specifically sourced for R&D** activity should be reported in Question 8(a) (i.e. own funds).
- Sources of funds for R&D may not be the same as income source. For example, bank interest is considered to be this organisation’s own funds, not funding from a financial institution.

(a) Own funds

*Including*

- Equity, borrowings and retained earnings
- Funding from budget appropriations

Report in (A\$'000)

\$  ,  , 000

(b) Other Commonwealth government .....

\$  ,  , 000

(c) Other State and local government .....

\$  ,  , 000

(d) Private not-for-profit organisations .....

\$  ,  , 000

(e) Joint business and government (i.e. only funds provided by levies) .....

\$  ,  , 000

(f) Business .....

\$  ,  , 000

(g) Overseas sources (please specify in BLOCK letters)

\$  ,  , 000

(h) Other sources .....

\$  ,  , 000

Please specify, in BLOCK letters, the largest items and amounts included in ‘Other sources’

\$  ,  , 000

\$  ,  , 000

\$  ,  , 000

\$  ,  , 000

(i) **Total** (equals the total in Question 6(d)) .....

\$  ,  , 000

## Part G – Type of R&D activity

### 9 Please allocate the relevant percentage of total R&D expenditure reported in Question 6(d) to the following type(s) of R&D activity

(a) Pure basic research

**Definition**

- Pure basic research is the experimental and theoretical work undertaken to acquire new knowledge without looking for long term benefits other than the advancement of knowledge.
- For example, research into the migratory patterns of birds or the identification of new species to increase humankind's stock of knowledge, which will not necessarily result in a financial benefit.

.....  %

(b) Strategic basic research

**Definition**

- Strategic basic research is experimental and theoretical work undertaken to acquire new knowledge directed into specified broad areas in the expectation of practical discoveries. It provides the broad base of knowledge necessary for the solution of recognised practical problems.
- For example, research into next generation technology such as nanotechnology.

.....  %

(c) Applied research

**Definition**

- Applied research is original work undertaken primarily to acquire new knowledge with a specific application in view. It is undertaken either to determine possible uses for the findings of basic research or to determine new ways of achieving some specific and predetermined objectives.
- For example, research which turns ideas into operational forms, such as R&D into the application of energy efficient knowledge advancements in the design of a new processing plant.

.....  %

(d) Experimental development

**Definition**

- Experimental development is systematic work, using existing knowledge gained from research or practical experience, which is directed to: producing new materials, products, devices, policies, behaviours or outlooks; installing new processes, systems and services, or improving substantially those already installed.
- For example, the testing phase of a newly designed and constructed pilot plant, or substantial modification of existing hardware and software infrastructure.

.....  %

(e) **Total** (sum of percentages reported in Question 9(a), 9(b), 9(c) and 9(d)) ... ..  %

**Part H – Classification of R&D**

**10 Please allocate the relevant percentage of total R&D expenditure reported in Question 6(d) to each of the following Fields of Research (FOR) Divisions**

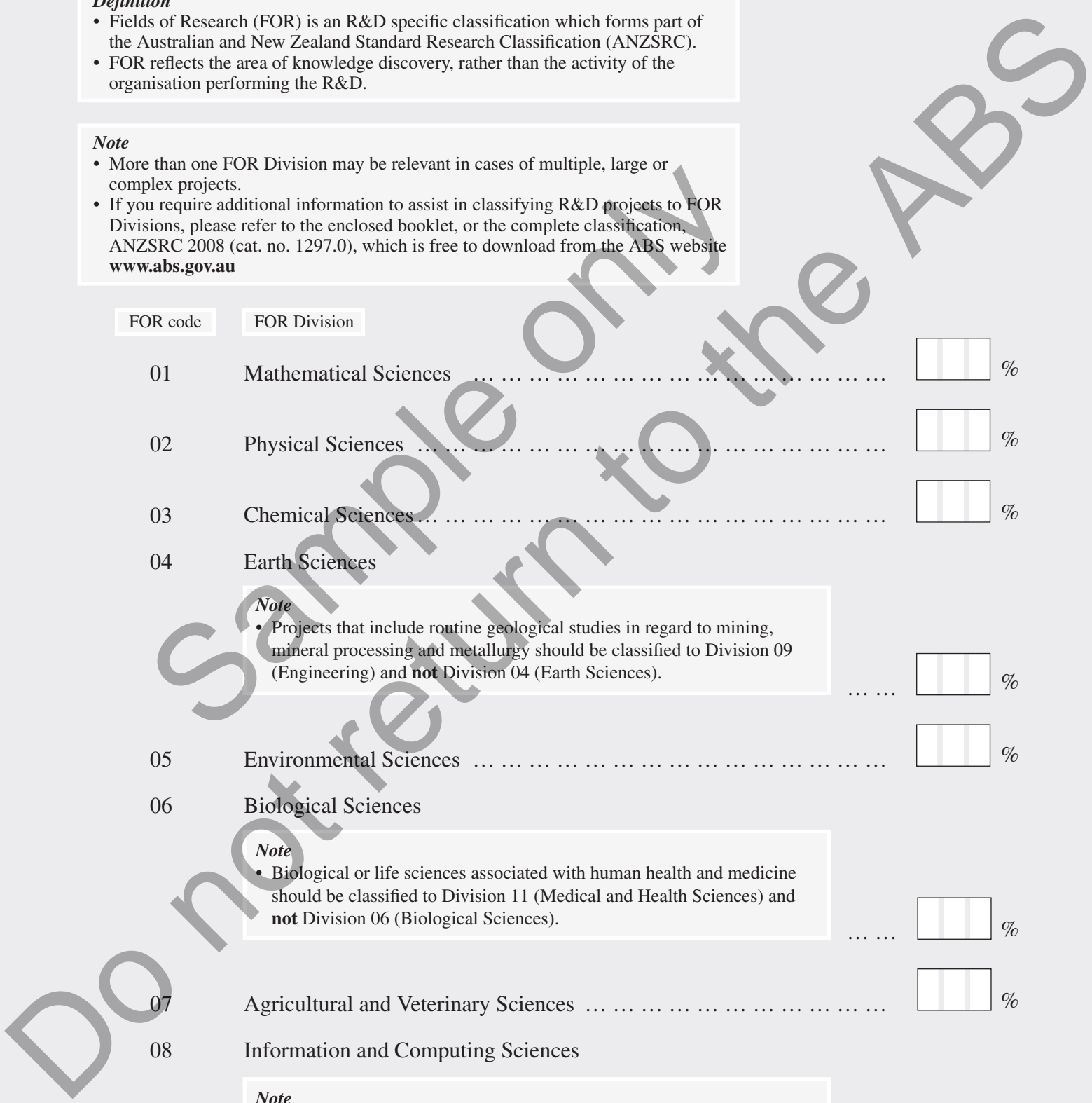
**Definition**

- Fields of Research (FOR) is an R&D specific classification which forms part of the Australian and New Zealand Standard Research Classification (ANZSRC).
- FOR reflects the area of knowledge discovery, rather than the activity of the organisation performing the R&D.

**Note**

- More than one FOR Division may be relevant in cases of multiple, large or complex projects.
- If you require additional information to assist in classifying R&D projects to FOR Divisions, please refer to the enclosed booklet, or the complete classification, ANZSRC 2008 (cat. no. 1297.0), which is free to download from the ABS website [www.abs.gov.au](http://www.abs.gov.au)

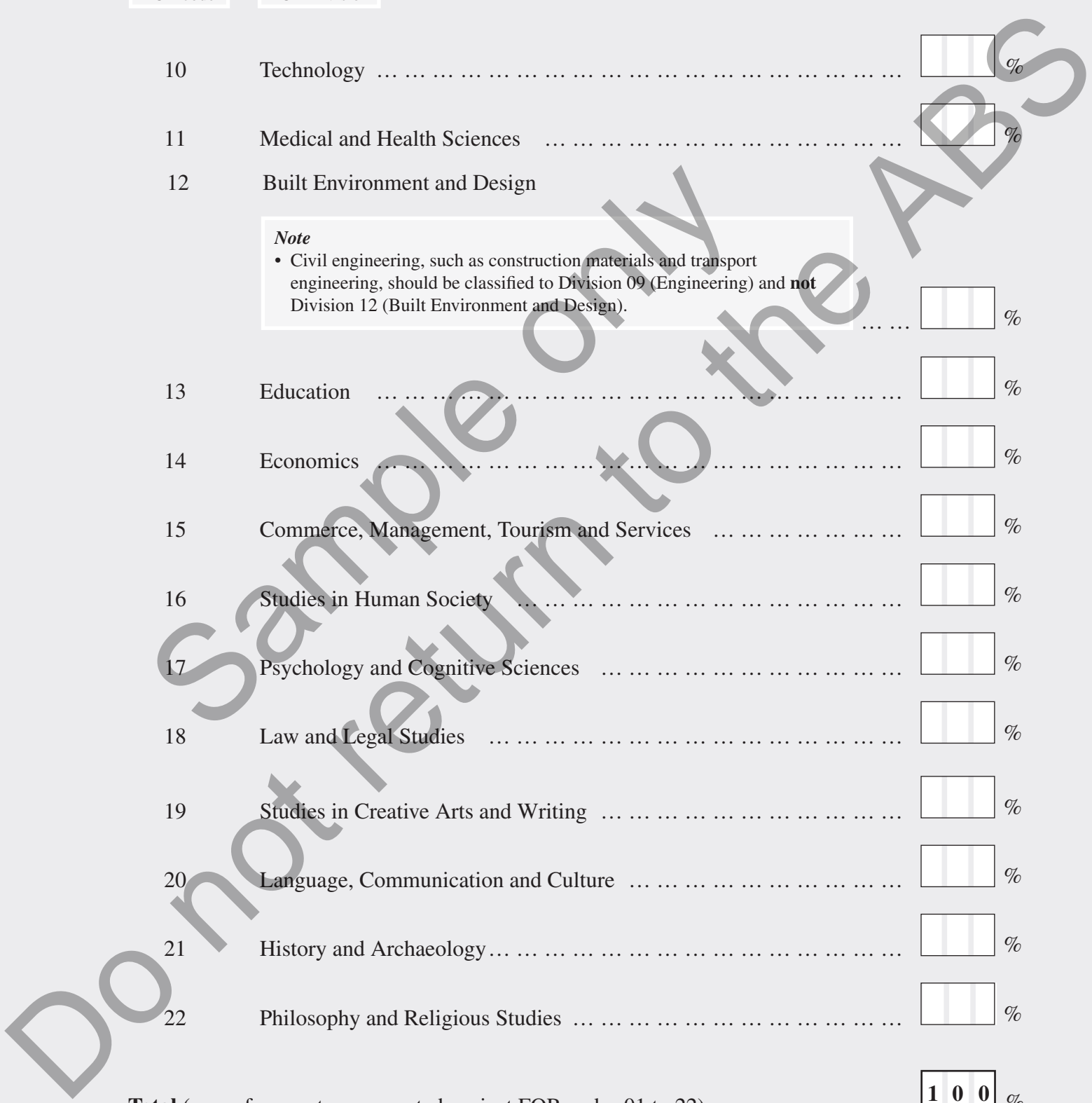
FOR code	FOR Division	
01	Mathematical Sciences .....	<input type="text"/> %
02	Physical Sciences .....	<input type="text"/> %
03	Chemical Sciences .....	<input type="text"/> %
04	Earth Sciences	
	<p><b>Note</b></p> <ul style="list-style-type: none"> <li>• Projects that include routine geological studies in regard to mining, mineral processing and metallurgy should be classified to Division 09 (Engineering) and <b>not</b> Division 04 (Earth Sciences).</li> </ul>	<input type="text"/> %
05	Environmental Sciences .....	<input type="text"/> %
06	Biological Sciences	
	<p><b>Note</b></p> <ul style="list-style-type: none"> <li>• Biological or life sciences associated with human health and medicine should be classified to Division 11 (Medical and Health Sciences) and <b>not</b> Division 06 (Biological Sciences).</li> </ul>	<input type="text"/> %
07	Agricultural and Veterinary Sciences .....	<input type="text"/> %
08	Information and Computing Sciences	
	<p><b>Note</b></p> <ul style="list-style-type: none"> <li>• Computer software development should be classified according to the area of knowledge discovery. For example, the creation of new software for use in automotive engineering is Division 08 (Information and Computing Sciences) and <b>not</b> Division 09 (Engineering).</li> </ul>	<input type="text"/> %
09	Engineering .....	<input type="text"/> %



**Part H – Classification of R&D – (continued)**

**10 Please allocate the relevant percentage of total R&D expenditure reported in Question 6(d) to each of the following Fields of Research (FOR) Divisions – (continued)**

FOR code	FOR Division	
10	Technology .....	<input type="text"/> %
11	Medical and Health Sciences .....	<input type="text"/> %
12	Built Environment and Design	
	<div style="border: 1px solid black; padding: 5px;"> <p><i>Note</i></p> <ul style="list-style-type: none"> <li>• Civil engineering, such as construction materials and transport engineering, should be classified to Division 09 (Engineering) and <b>not</b> Division 12 (Built Environment and Design).</li> </ul> </div>	<input type="text"/> %
13	Education .....	<input type="text"/> %
14	Economics .....	<input type="text"/> %
15	Commerce, Management, Tourism and Services .....	<input type="text"/> %
16	Studies in Human Society .....	<input type="text"/> %
17	Psychology and Cognitive Sciences .....	<input type="text"/> %
18	Law and Legal Studies .....	<input type="text"/> %
19	Studies in Creative Arts and Writing .....	<input type="text"/> %
20	Language, Communication and Culture .....	<input type="text"/> %
21	History and Archaeology .....	<input type="text"/> %
22	Philosophy and Religious Studies .....	<input type="text"/> %
<b>Total</b> (sum of percentages reported against FOR codes 01 to 22) .....		<input type="text" value="100"/> %



**Part H – Classification of R&D – (continued)**

**11 Please allocate the relevant percentage of total R&D expenditure reported in Question 6(d) to each of the following Socio-economic Objective (SEO) Divisions**

**Definition**

- Socio-economic Objective (SEO) is an R&D specific classification which forms part of the Australian and New Zealand Standard Research Classification (ANZSRC).
- SEO reflects the intended purpose or outcome of the R&D, and the dominant beneficiary or beneficiaries of the R&D output.

**Note**

- More than one SEO Division may be relevant in cases of multiple, large or complex projects.
- If you require additional information to assist in classifying R&D projects to SEO Divisions, please refer to the enclosed booklet, or the complete classification, ANZSRC 2008 (cat. no. 1297.0), which is free to download from the ABS website [www.abs.gov.au](http://www.abs.gov.au)

**Sector A: Defence**

SEO code	SEO Division	
81	Defence .....	<input type="text"/> %

**Sector B: Economic Development**

SEO code	SEO Division	
82	Plant Production and Plant Primary Products .....	<input type="text"/> %
83	Animal Production and Animal Primary Products .....	<input type="text"/> %
84	Mineral Resources (excluding Energy Resources) .....	<input type="text"/> %
85	Energy .....	<input type="text"/> %
86	Manufacturing .....	<input type="text"/> %
87	Construction.....	<input type="text"/> %
88	Transport	

**Note**

- Manufacture of transport equipment (such as motor vehicles, railway rolling stock, aircraft, boats) and their components should be classified to Division 86 (Manufacturing) and **not** Division 88 (Transport).

.....  %

**Part H – Classification of R&D – (continued)**

**11 Please allocate the relevant percentage of total R&D expenditure reported in Question 6(d) to each of the following Socio-economic Objective (SEO) Divisions – (continued)**

Sector B: Economic Development – (continued)

SEO code	SEO Division	
89	Information and Communication Services	
	<p><i>Note</i></p> <ul style="list-style-type: none"> <li>Computer software development should be classified according to the intended purpose of the software. For example, software specifically developed for a food processing factory should be classified to Division 86 (Manufacturing) and <b>not</b> Division 89 (Information and Communication Services).</li> </ul>	<input type="text"/> %
90	Commercial Services and Tourism	<input type="text"/> %
91	Economic Framework	<input type="text"/> %

Sector C: Society

SEO code	SEO Division	
92	Health	
	<p><i>Note</i></p> <ul style="list-style-type: none"> <li>Pharmaceutical manufacturing should be classified to Division 86 (Manufacturing) and <b>not</b> Division 92 (Health).</li> </ul>	<input type="text"/> %
93	Education and Training	<input type="text"/> %
94	Law, Politics and Community Services	<input type="text"/> %
95	Cultural Understanding	<input type="text"/> %

Sector D: Environment

SEO code	SEO Division	
96	Environment	
	<p><i>Note</i></p> <ul style="list-style-type: none"> <li>Environmental aspects of projects associated with economic activities should be classified to the relevant Division under the Economic Development sector, and <b>not</b> Division 96 (Environment).</li> </ul>	<input type="text"/> %

Sector E: Expanding Knowledge

SEO code	SEO Division	
97	Expanding Knowledge	<input type="text"/> %

**Total** (sum of percentages reported against SEO codes 81 to 97)  %



## Part I – Comments and time taken

### 12 Please provide comments

- on any information you have supplied on this form (e.g. related to unusual movements or other factors) (Please use BLOCK letters)


- on any difficulties you had in providing the requested information, or suggested improvements to this form (Please use BLOCK letters)


### 13 Please provide an estimate of the time taken to complete this form

**Including**

- The time actually spent reading the instructions, working on the questions and obtaining the information
- The time spent by all employees in collecting and providing this information

hrs

mins

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**Thank you for completing this form**