



## Sample assessment task

<b>Year level</b>	7
<b>Learning area</b>	Science
<b>Subject</b>	Biological Sciences
<b>Title of task</b>	Classification activity

## Task details

<b>Description of task</b>	In this introductory task, students develop the idea of classification. They work collaboratively in a small group and share their ideas with other groups. They respond individually to questions and apply their knowledge to solve problems. This activity will enable the teacher to plan future learning experiences involving classification.
<b>Assessment conditions</b>	In this activity, students are asked to participate in group work and discuss their ideas with other groups. They work individually to complete the activity sheet.
<b>Suggested time</b>	1–2 lessons

## Content description

<b>Content from the Western Australian Curriculum</b>	<b>Science understanding</b> Classification helps organise the diverse group of organisms
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## Task preparation

<b>Prior learning</b>	Students have learnt about classification and different methods of representing classification.
<b>Assessment differentiation</b>	Teachers should differentiate their teaching and assessment to meet the specific learning needs of their students, based on their level of readiness to learn and their need to be challenged. Where appropriate, teachers may either scaffold or extend the scope of the assessment tasks.

## Assessment task

<b>Resources</b>	<ul style="list-style-type: none"><li>• A collection of newspapers containing classified advertisements</li><li>• Access to online second-hand buying sites and shopping sites</li><li>• A similar set of eight buttons for each group</li><li>• Copies of the worksheet for each student</li></ul>
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**Instructions to student**

**Name:** \_\_\_\_\_

In science, classification is the way in which things are placed into groups that share similar features.

Most newspapers have a 'For sale' section called 'classified advertisements'. Online second-hand sites and shopping sites also classify items for sale.

1. In your group, discuss the features of the classified advertisements from the newspaper and the features of an online site. After your discussion, **complete Question 1 by yourself**.

(a) Describe how these advertising sites are organised. (2 marks)

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(b) Explain why this is useful when you are looking for an item to buy. (3 marks)

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(c) Describe **three** examples in everyday life where you group or classify objects. (3 marks)

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(d) Describe **three** examples where classification is used at school. (3 marks)

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2. Your group will be provided with a set of eight buttons.

**Sort the buttons** into two groups based on a physical feature (characteristic).

(a) Draw a diagram to show your two groups of buttons.

(4 marks)



**GROUP A**



**GROUP B**

(b) Which characteristic did you use to separate the buttons?

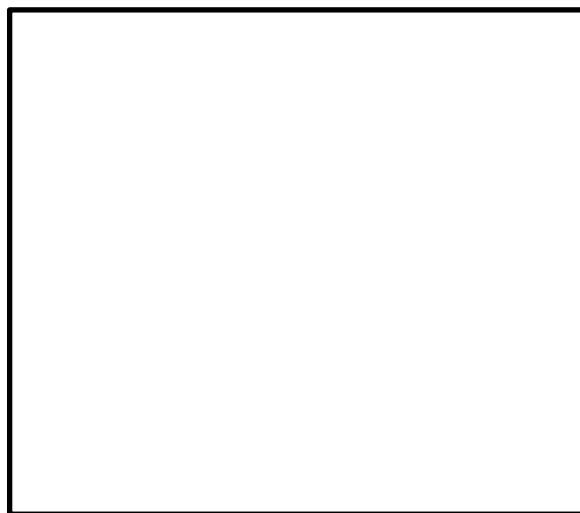
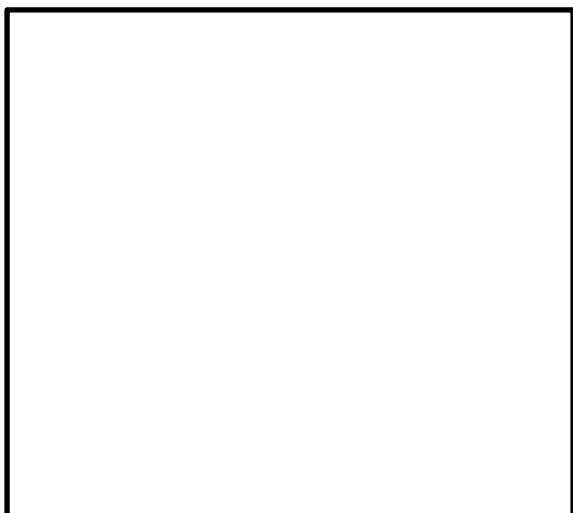
(1 mark)

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(c) Divide **one** of your groups of buttons into two smaller groups and draw them in the squares below.

(2 marks)

Which group will you divide again? **GROUP** \_\_\_\_\_



Which characteristic did you use to separate the buttons?

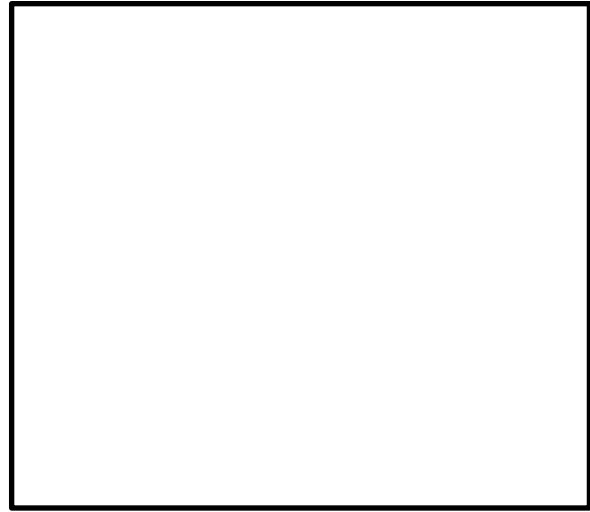
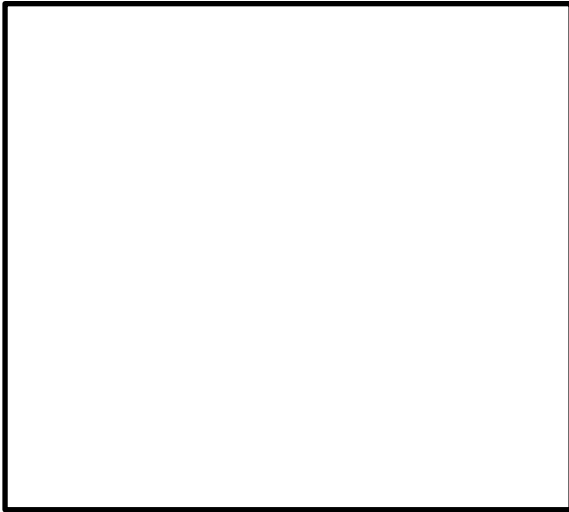
( 1 mark)

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(d) Divide **one** of these smaller groups of buttons once again and draw them in the squares below. (2 marks)



Record the characteristic that you used to separate the buttons. (1 mark)

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(e) Name two things you notice about the groups as you keep dividing them? (2 marks)

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**Discuss your group's** results with other students.

Then answer question (e) below **by yourself**.

(f) List the characteristics used by other groups. (3 marks)

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Were they the same as yours or different? Explain. (2 marks)

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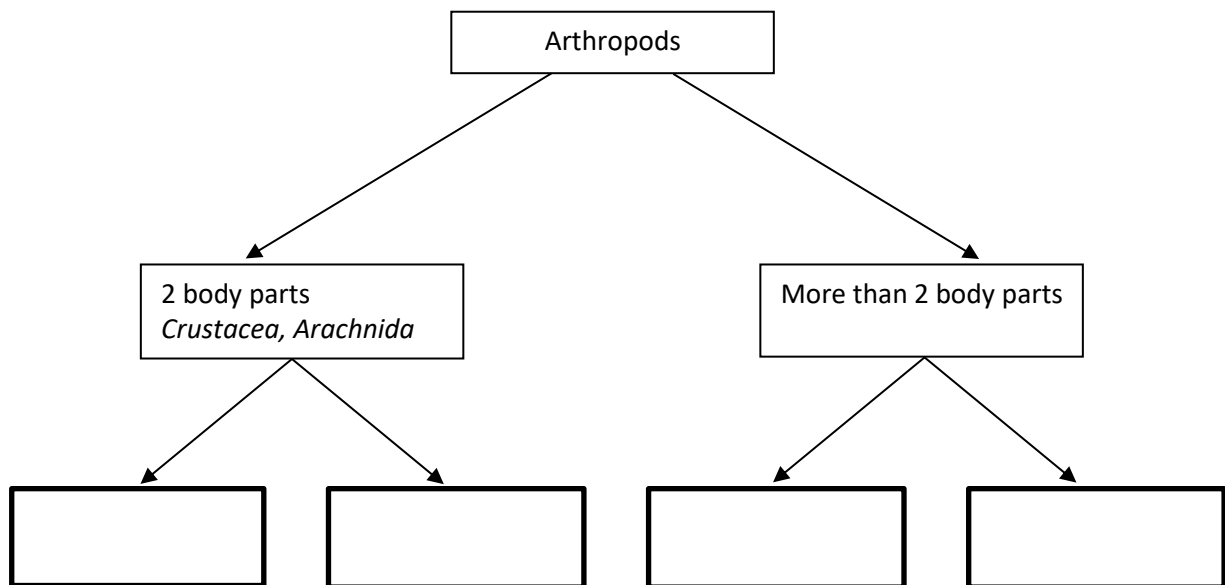
By dividing each group into two smaller groups, you are making a dichotomous key. Dichotomous means "divided into two parts".

We can use a dichotomous key to classify an organism by making choices that leads to the correct name of that organism.

3. The table below shows characteristics of some classes of arthropods. Use the information provided in the table to answer the questions which follow.

Class	Characteristics		
	Number of body parts	Number of legs	Number of antennae
<i>Crustacea</i>	2	5 or more	2 pairs
<i>Chilopoda</i>	Head plus more than 3 body parts	1 pair on each body part	1 pair
<i>Diploda</i>	Head plus more than 3 body parts	2 pairs on each body part	1 pair
<i>Arachnida</i>	2	4 pairs	none
<i>Insecta</i>	3	3 pairs	1 pair

- (a) Use the dichotomous key below to answer the following questions.



- (i) Which classes of arthropods belong in the box with more than 2 body parts? (3 marks)

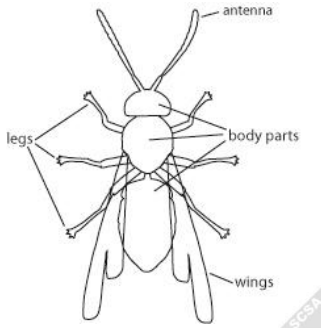
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- (ii) Divide each of the groups again, so there are characteristics written in each of the four boxes. (4 marks)

(b) Using the table, describe the characteristics for each of the animals pictured below. Then decide which Class of arthropods they belong to.

(12 marks)

(i)



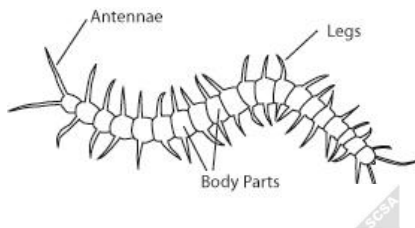
**Body parts:** \_\_\_\_\_

**Legs:** \_\_\_\_\_

**Antennae:** \_\_\_\_\_

**Class:** \_\_\_\_\_

(ii)



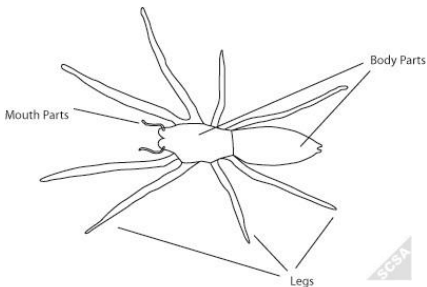
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**Class:** \_\_\_\_\_

(iii)



\_\_\_\_\_

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\_\_\_\_\_

**Class:** \_\_\_\_\_

(c) Explain why some organisms are difficult to classify using the dichotomous key.

(2 marks)

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## Sample marking key

Question 1	
Description	Marks
<b>(a) Describe how these sites are organised</b>	
Describes <b>two</b> ways sites are organised	2
Describes <b>one</b> way sites are organised	1
<b>Subtotal</b>	<b>2</b>
<b>Answers could include, but is not limited to:</b> Features that these resources have in common could include:	
<ul style="list-style-type: none"> <li>organised by category</li> </ul>	[1]
<ul style="list-style-type: none"> <li>organised alphabetically</li> </ul>	[1]
Description	Marks
<b>(b) Explain why this is useful when you are looking for an item to buy</b>	
Provides a reason for the usefulness of classified advertisements and online shopping sites	1
Supports answer	1–2
<b>Subtotal</b>	<b>3</b>
<b>Answers could include, but is not limited to:</b> Reason why this is useful:	
<ul style="list-style-type: none"> <li>reduces the number of items you need to go through to find what you want</li> </ul>	[1]
<ul style="list-style-type: none"> <li>this saves time</li> </ul>	[1]
<ul style="list-style-type: none"> <li>easier to find items</li> </ul>	[1]
Description	Marks
<b>(c) Describe <b>three</b> examples in everyday life where you group or classify objects</b>	
Describes three examples in everyday life	1–3
<b>Subtotal</b>	<b>3</b>
<b>Answers could include, but is not limited to:</b> Three examples could include:	
<ul style="list-style-type: none"> <li>storage of clothing—drawers for underclothes, jumpers</li> </ul>	[1]
<ul style="list-style-type: none"> <li>cutlery drawers divided into parts for knives, forks and spoons</li> </ul>	[1]
<ul style="list-style-type: none"> <li>kitchen shelves organised into packets, tins, spices</li> </ul>	[1]
Description	Marks
<b>(d) Describe <b>three</b> examples where classification is used at school</b>	
Describes three examples where classification is used at school	1–3
<b>Subtotal</b>	<b>3</b>
<b>Answers could include, but is not limited to:</b> Examples could include:	
<ul style="list-style-type: none"> <li>girls' toilets versus boys' toilets</li> </ul>	[1]
<ul style="list-style-type: none"> <li>students grouped in different Years</li> </ul>	[1]
<ul style="list-style-type: none"> <li>books sorted in library according to topic</li> </ul>	[1]
<ul style="list-style-type: none"> <li>lessons grouped according to Maths/English/Science</li> </ul>	[1]
<b>Question 1 total</b>	<b>11</b>

<b>Question 2</b>	
<b>Description</b>	<b>Marks</b>
<b>(a) Draw a diagram to show how you divided the buttons into two groups.</b>	
Draws a diagram of the eight buttons, clearly showing their characteristics	4
Uses the same characteristic to divide the group	1
<b>Subtotal</b>	<b>5</b>
<b>Answers could include, but is not limited to:</b>	
<ul style="list-style-type: none"> <li>• Eight buttons drawn with characteristics shown, e.g. number of holes, colour, shape</li> <li>• The same characteristic is used to sort the buttons into two groups, e.g. colour (not colour for one group and shape for the other)</li> </ul>	
<b>Description</b>	<b>Marks</b>
<b>(b) Which characteristic did you use to separate the buttons?</b>	
Identifies the characteristic used to separate the group	1
<b>Subtotal</b>	<b>1</b>
<b>Answer could include, but is not limited to:</b>	
<ul style="list-style-type: none"> <li>• colour</li> <li>• shape</li> <li>• number of holes</li> <li>• presence or absence of a shank</li> </ul>	[1] [1] [1] [1]
<b>Description</b>	<b>Marks</b>
<b>(c) Divide one of the groups of buttons into two smaller groups and draw them. Record the characteristic that you used to separate the buttons.</b>	
Draws two groups of buttons that have been divided according to one characteristic	2
Characteristic used is identified	1
<b>Subtotal</b>	<b>3</b>
<b>Description</b>	<b>Marks</b>
<b>(d) Divide one of these smaller groups of buttons once again and draw them. Record the characteristic that you used to separate the buttons.</b>	
Draws two groups of buttons that have been divided according to one characteristic	2
Characteristic used is identified	1
<b>Subtotal</b>	<b>2</b>
<b>Description</b>	<b>Marks</b>
<b>(e) Name two things you notice about the groups as you keep dividing them?</b>	
Describes two characteristics of groups	1–2
<b>Subtotal</b>	<b>2</b>
<b>Answer could include, but is not limited to:</b>	
<ul style="list-style-type: none"> <li>• groups are smaller</li> <li>• buttons are more similar to each other</li> </ul>	[1] [1]



Description	Marks
(f) List the characteristics used by other groups. Were they the same as yours or different? Explain.	
Lists characteristics used by other groups	1–3
States whether they were the same or different	1
Supports answer with an example	1
<b>Subtotal</b>	<b>5</b>
<b>Answers could include, but is not limited to:</b>	
• Lists characteristics used by other groups (at least three characteristics must be used), e.g. shape, colour, number of holes, presence or absence of shank	[1]
• Identifies whether characteristics were the same or different	[1]
• Identifies same or different order of using characteristics	[1]
<b>Question 2 total</b>	<b>18</b>
<b>Question 3</b>	
Description	Marks
(a) (i) Which classes of arthropods belong in the box with more than 2 body parts? (ii) Divide each of the groups again, so there are characteristics written in each of the four boxes	
Identifies the 3 classes of arthropods	1–3
Writes the characteristic in each of the boxes provided (4 boxes)	1–4
<b>Subtotal</b>	<b>7</b>
(b) Using the table, describe the characteristics for each of the animals pictured below. Then decide which Class of arthropods they belong to.	
2-3 body parts 3 pairs of legs 1 pair antennae <i>Insecta</i>	1–4
Head plus more than 3 body parts 1 pairs of legs per body part 1 pair antennae <i>Chilopoda</i>	1–4
2 body parts 4 pairs of legs No antennae <i>Arachnida</i>	1–4
<b>Subtotal</b>	<b>12</b>
Description	Marks
(c) Explain why some organisms are difficult to classify using the dichotomous key.	
Provides a reason why some organisms are difficult to classify	1
Supports answer with an example	1
<b>Answer could include, but is not limited to:</b>	
Features not present in key	[1]
May have wings	[1]
<b>Question 3 total</b>	<b>21</b>
<b>Total</b>	<b>50</b>