

The characteristics of living things

Living and never lived

- 1 Is the hypothesis 'A plant can show it is alive by growing' testable? Explain your answer.

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Looking for characteristics of life

- 2 A rabbit is eating grass. Its ears turn to face a sound and the rabbit stops eating. As the sound gets louder the rabbit hops away.

- a How many characteristics of life is the rabbit displaying?

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- b Name each characteristic of life and copy down the text that describes it from the question paragraph.

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Nutrition

- 3 Su Lin is looking at animals with pointed teeth and flat-topped teeth. She constructs the hypothesis that pointed teeth will bite deeper than flat-topped teeth. She makes two 'teeth' from modelling clay, one with a pointed top and one with a flat top. She plans to drop each 'tooth' into a bowl of flour and measure the depth of the hole each one makes. She will drop each tooth so that the top is the first part to go into the flour.

How can she make the test fair?

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Respiration

4 Which of the following statements about respiration are true? Tick (✓) **two** boxes.

All living things respire. ☐

In respiration energy is taken in from food. ☐

Respiration is the process of moving air in and out of the body. ☐

Many aquatic animals have gills which take up oxygen dissolved in water. ☐

Movement

5 a What are the structures in the body that allow animals to move?

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b Give **three** reasons why animals move.

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c The heart is made almost entirely of these structures. What do they allow the heart to do?

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d What do these structures do in the stomach?

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Sensitivity

6 Name the **five** sense organs and for each one state the sense with which it is associated.

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Growth and reproduction



7 The table below shows the growth of four female elephants over 20 years.

Elephant	0 years Shoulder height/cm	5 years Shoulder height/cm	10 years Shoulder height/cm	15 years Shoulder height/cm	20 years Shoulder height/cm
Abena	100	148	170	185	190
Bisa	120	165	200	205	210
Chipo	130	180	210	215	218
Doli	110	155	185	200	205

- a Which elephant is the smallest?
- b Which elephant is the largest?
- c What was the increase in shoulder height of Bisa over the first 15 years of her life?

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d By how much did each elephant grow in the first 5 years of her life?

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e How much did each elephant grow between 15 and 20 years?

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f Describe the pattern shown by the growth of the elephants over 20 years.

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g Predict the shoulder height of Doli at age 25.

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Excretion

- 8 a When food and oxygen are used up in the body, waste products are made. Explain why the body must get rid of them.

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- b Name **two** liquids that the human body excretes.

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- c What is the waste product we release in the air we breathe out?


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Plant life

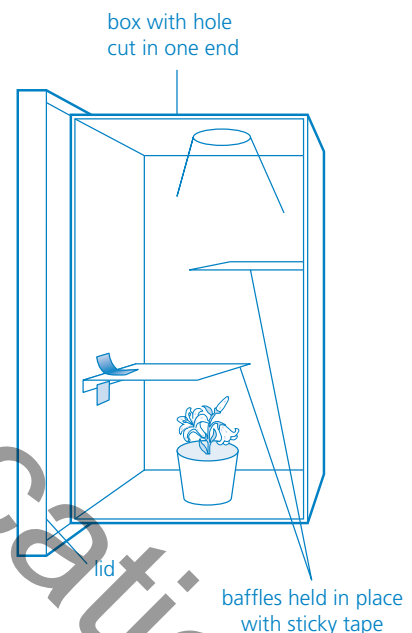
- 9 a** What signs of life are being shown by the plant on the right?

- b** When a new plant spreads out over the ground, what **two** signs of life does it display?



-  **10** Does the colour of light affect the way a plant grows towards it? How could you find out using the equipment shown in the diagram on the right? You will also need to use other materials to help you investigate. You may need to make more sets of equipment like that in the diagram.

Plan an experiment to investigate the effect of different colours on the plant.

[illegible]

In your enquiry, what is

a the independent variable(s)?

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b the dependent variable(s)?

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c the control variable(s)?

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Looking for life beyond the Earth



11 John is setting up an experiment to be carried on a space craft which is travelling to another planet. He wants to find out if there are living things in the soil on the other planet.

a What could he add to the soil which might be used by living things that are in it?

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b What could he test for to see if there are any living things in the soil?

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c The space craft lands in just one place on the planet, but will be able to make a few soil tests around it. If the tests do not show signs of life, is the conclusion 'There is no life on the planet' accurate, or is it limited? Explain your answer.

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