

## Science Year 4: Unit 1-Scientific Skills

### Practice 1

Write the science process skills for the following statements

The key was sink in water because it is more denser than water.

The strength of magnet can defined as the number of thumbtacks attracted by the magnet.

As the number of stirs increases, the time taken for the sugar to dissolve decreases.

Making a hypothesis

Controlling variables

Observing

Defining operationally

Making inference

The table below shows the time for the salt to dissolve in 100 ml of water.

|                                          |     |     |     |     |     |
|------------------------------------------|-----|-----|-----|-----|-----|
| Quantity of salt (g)                     | 5   | 10  | 15  | 20  | 25  |
| Time taken for salt to dissolve (minute) | 2.3 | 3.1 | 4.0 | 5.0 | 6.2 |

Based on the above information, state

i) Manipulated variable : \_\_\_\_\_

Responding variable : \_\_\_\_\_

Practice 2

The diagram below shows an investigation on the length of a lighted candle.



The following table shows the results of this investigation.

|                       |    |    |    |
|-----------------------|----|----|----|
| Time (minutes)        | 0  | 20 | 30 |
| Length of candle (cm) | 16 | 13 | 9  |

a. State **two** information obtained from this investigation.

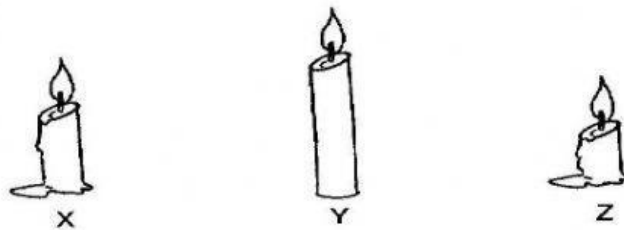
i) \_\_\_\_\_

ii) \_\_\_\_\_

b. State the **manipulated variable** in this investigation.

\_\_\_\_\_

c. The diagram shows the changes in the length of the candle that can be observed in this investigation.



i) Arrange the candles as the **time increases**.



ii) State the **trend** of change of the candle length when the time increases.

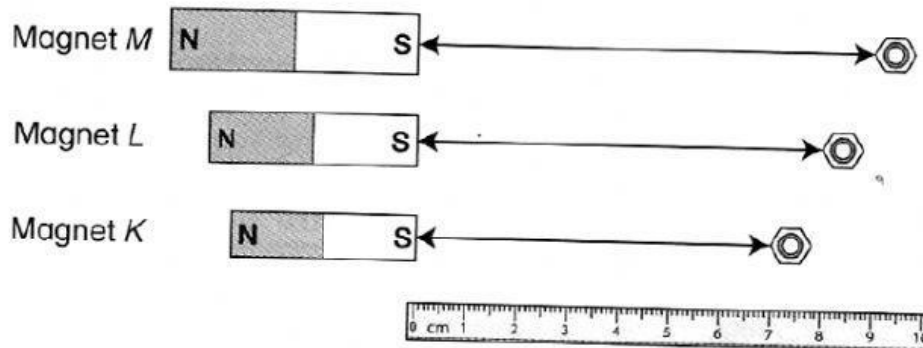
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## Science Year 4: Unit 1- Scientific Skills

### Practice 4

The diagram below shows the distance of nuts that can be pulled by magnet K, L and M has been studied.



- a. What is studied about the magnet in this investigation?

Mark (✓) at the box below.

The strength of the magnet. ☐

The force of the magnet pole. ☐

The action of the magnet to material. ☐

- b. State **one hypothesis** that can be tested in this investigation.

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- c. **Match** the following information with the correct variables in this investigation.

**INFORMATION**

Shape of magnet ☐

Size of magnet ☐

Distance of nut that can be pulled. ☐

**Variable**

☐ Manipulated variable

☐ Responding variable

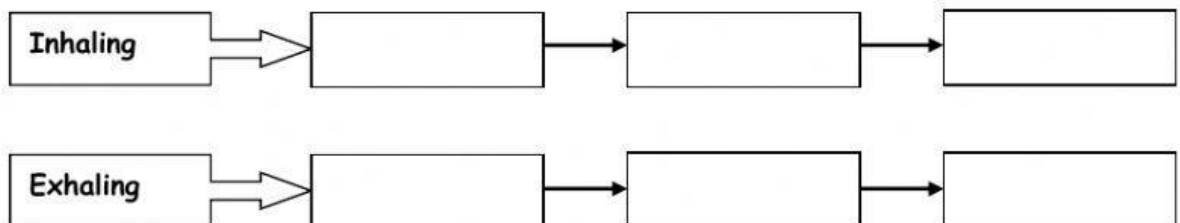
☐ Constant variable

Practice 1

a. State three organs involved in the human breathing process.

- i) \_\_\_\_\_
- ii) \_\_\_\_\_
- iii) \_\_\_\_\_

b. The diagram below shows the flow of air during human breathing processes. Complete the flows.



c. Match correctly.

Inhaling

Exhaling

- ◆ Air goes out of the lungs
- ◆ Chest rises and expands
- ◆ Chest falls and deflates
- ◆ Air comes into the lungs

Practice 2

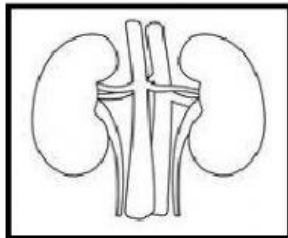
Excretion is one of the important life processes for humans.

- a. What is meant by excretion ?

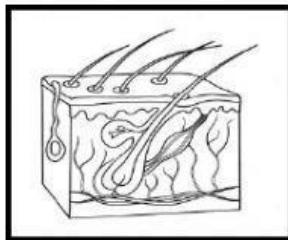
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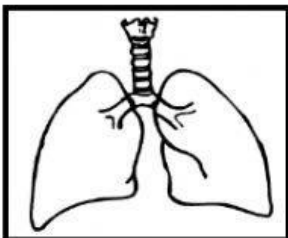
- b. State the waste matter that is eliminated by the following excretory organs.



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- c. What is the life process that eliminates food waste through the anus ? Tick (✓) the correct answer.

Excretion ☐

Defecation ☐

Breathing ☐

- d. Why do humans need to undergo life processes such as excretion and defecation ?

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Practice 3

- a. State the sensory organs that receive the following stimuli and write the suitable response for each stimulus.

|                        |                                                                                   |                                                                                    |                                                                                     |
|------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Type of stimulus       |  |  |  |
|                        | Situation R                                                                       | Situation S                                                                        | Situation T                                                                         |
| Sensory organ involved |                                                                                   |                                                                                    |                                                                                     |
| Response               |                                                                                   |                                                                                    |                                                                                     |

- b. What is the importance of response to the stimulus above ?

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- c. Predict what will happen if the sensory organ used in Situation S does not function.

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- d. State one habit that can disrupt the process of human response to stimuli.

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Practice 4

Diagram shows four activities done by four pupils during free time. Amar carried out the investigation on four pupils to find out their rates of breathing in one minute.

|                                                                                   |                                                                                   |                                                                                    |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>Amir</b>                                                                       | <b>Ali</b>                                                                        | <b>Ahmad</b>                                                                       | <b>Arif</b>                                                                         |

| Name of pupil | Type of activity  | Number of upwards and downwards movements of the chest in one minute |
|---------------|-------------------|----------------------------------------------------------------------|
| <b>Amir</b>   | Skipping          | 54                                                                   |
| <b>Ali</b>    | Reading           | 26                                                                   |
| <b>Ahmad</b>  | Cycling           | 38                                                                   |
| <b>Arif</b>   | Playing Badminton | 48                                                                   |

a. What is meant by the **rate of breathing** ?

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b. Which activity causes the highest rate of breathing ?

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c. State one inference based on your answer in b.

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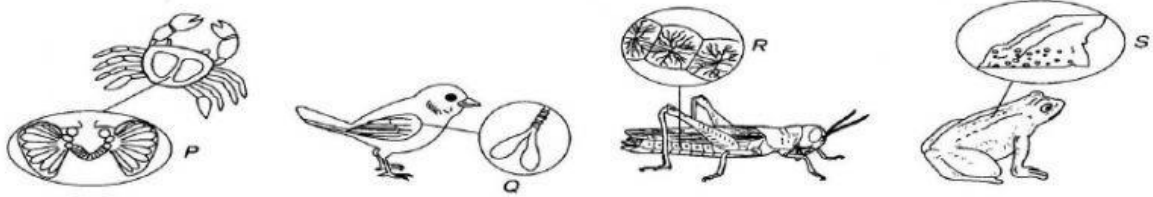
d. What conclusion can be drawn from this investigation ? Tick (✓) the correct answer.

|                                                                           |                          |
|---------------------------------------------------------------------------|--------------------------|
| The less intense the activity, the higher the rate of breathing.          | <input type="checkbox"/> |
| The more intense the activity, the higher the rate of breathing.          | <input type="checkbox"/> |
| The rate of breathing does not influenced by the intense of the activity. | <input type="checkbox"/> |

## Science Year 4: Unit 3 - Animals

### Practice 1

The diagram below shows the respiratory organs of animals labelled as P, Q, R and S.



a. Name the above respiratory organs.

P : \_\_\_\_\_

Q : \_\_\_\_\_

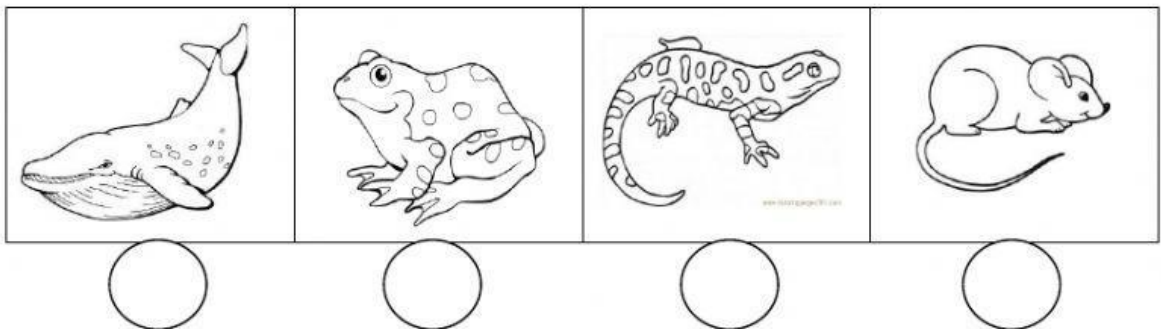
R : \_\_\_\_\_

S : \_\_\_\_\_

b. Name two other animals that breathe through following respiratory organs.

| Respiratory Organ | Animals |
|-------------------|---------|
| Moist skin        |         |
| Spiracles         |         |
| Gills             |         |
| Lungs             |         |

c. Tick (✓) the animals that have two breathing organs.



d. Based on the information given, name the animal X.

When I was young, I lived in water and breathe using my gills, As an adult, I am able to live in water and on land because I have two breathing organs.

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