



International  
Benchmark  
Tests in English,  
Mathematics  
& Science

GRADE 4

2015

# Science

STUDENT NAME \_\_\_\_\_

NAME OF SCHOOL \_\_\_\_\_

## TEST INSTRUCTIONS

### FILL IN YOUR DETAILS

Turn to your ANSWER SHEET and fill in your name, school, grade, section, today's date, your date of birth and gender.

### ANSWERING QUESTIONS

Go to the SCIENCE ANSWER SHEET.

This test has **40 QUESTIONS**. Each question has four possible options.

Choose the **BEST** answer from the four options, **A, B, C** or **D**.

**FILL** in **ONE** circle on your answer sheet with a pencil.

If you make a mistake, erase the pencil mark and fill in a different circle.

You must colour the entire circle as shown below:

#### Correct response



#### Incorrect responses



Line



Very light pencil



Pen



Colored pencil

Marks are NOT deducted for incorrect answers.

**ALL ANSWERS SHOULD BE MARKED ON YOUR ANSWER SHEET ONLY.**

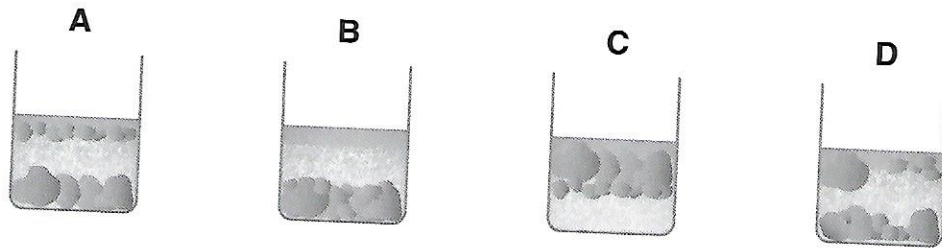
### EQUIPMENT ALLOWED IN THIS TEST

You may use a 2B or B pencil for this test. You may NOT use a dictionary for this test.

### TIME ALLOWED FOR TEST

The time allowed to complete this test is **60 minutes**.

1 Sand, rocks and water are mixed together in a jar. What will the jar look like after one hour?



2 Which of these is true?

- A Sand dissolves in water.
- B Water stops rocks sticking together.
- C All rocks are formed from sand.
- D Rocks can break down to form sand.

3 Why are some cooking pots made from steel and not clay?

- A Steel allows heat to pass through more easily.
- B Steel makes the food taste better.
- C Steel allows electricity to pass through it.
- D Steel is attracted by a magnet.

The pictures show three foods.



butter

milk

honey

4 What is the same for the foods?

- A They are all hard.
- B They are all liquids.
- C Animals give these foods to their babies.
- D Animals help to make these foods.

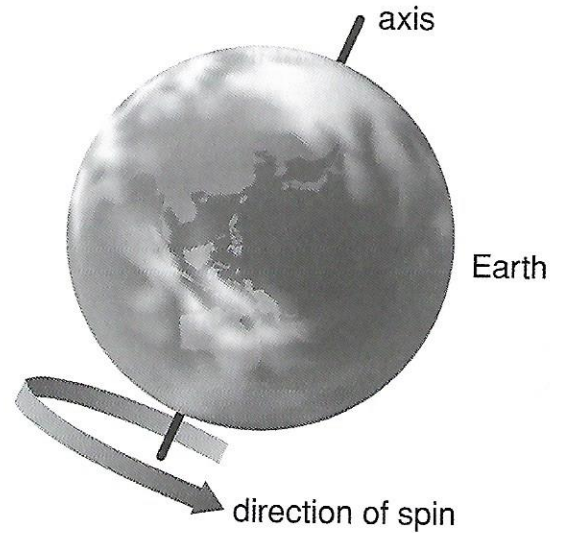
5 What can you use to find the mass of the butter?

- A a measuring tape
- B a ruler
- C a knife
- D a balance

The picture shows the Earth spinning on its axis.

6 How long does the Earth take to spin once on its axis?

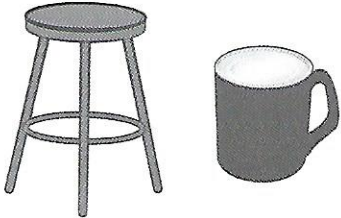
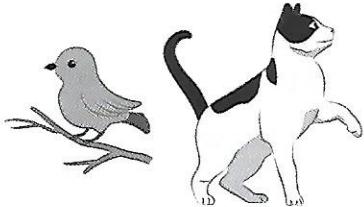
- A 12 hours
- B 24 hours
- C 30 days
- D 365 days



7 What does the Earth's spin cause?

- A rainfall
- B strong winds
- C change in seasons
- D sunrise and sunset

Four things were sorted into two groups, non-living and living.

Non-living	Living
	

8 What is true about the two groups?

	Non-living	Living
A	can grow	cannot grow
B	can feel pain	cannot feel pain
C	cannot move	can move
D	can breathe	cannot breathe

9 What do the pictures show?

- A All living things have teeth.
- B Living things can look different.
- C All man-made things look alike.
- D The four things are always found together.

Sugar is added to three bowls of water. The water is then stirred. The temperature of the water in each bowl is different.



20 °C



30 °C



40 °C

The table shows how long the sugar takes to dissolve.

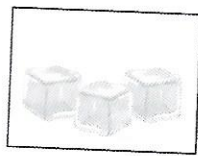
Water temperature	How long sugar takes to dissolve
20 °C	10 minutes
30 °C	7 minutes
40 °C	4 minutes

- 10** What does the experiment show?
- A Sugar dissolves most quickly at 20 °C.
  - B Sugar dissolves most slowly at 40 °C.
  - C Sugar dissolves only when water is heated.
  - D Sugar dissolves faster at higher temperatures.
- 11** How can you change the water into a gas?
- A Heat the water.
  - B Cool the water.
  - C Stir the water with a spoon.
  - D Cover the bowls with lids.

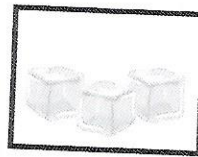
Three ice cubes were put into each of four different boxes.



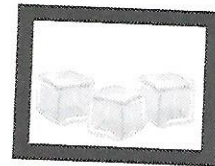
Box 1



Box 2



Box 3



Box 4

Box	Time the ice took to melt
1	6 minutes
2	3 minutes
3	5 minutes
4	8 minutes

12 In which box did the ice melt the slowest?

A  
Box 1

B  
Box 2

C  
Box 3

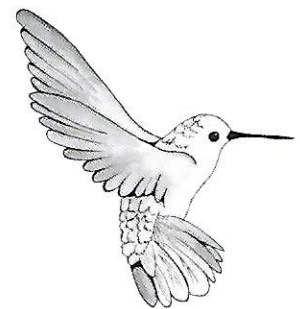
D  
Box 4

13 What change occurs during melting?

- A gas changes to solid
- B solid changes to liquid
- C liquid changes to solid
- D solid changes to gas

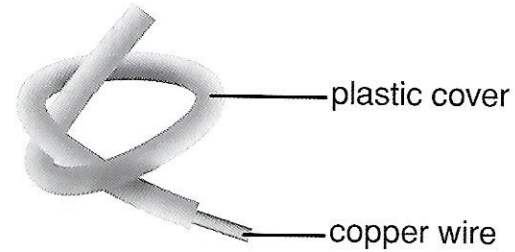
14 Which feature of this bird shows the type of food it eats?

- A the sound it makes
- B the size of its wings
- C the shape of its beak
- D the colour of its feathers



15 Why can copper wire conduct electricity?

- A It is hard.
- B It is shiny.
- C It is a metal.
- D It is found in nature.



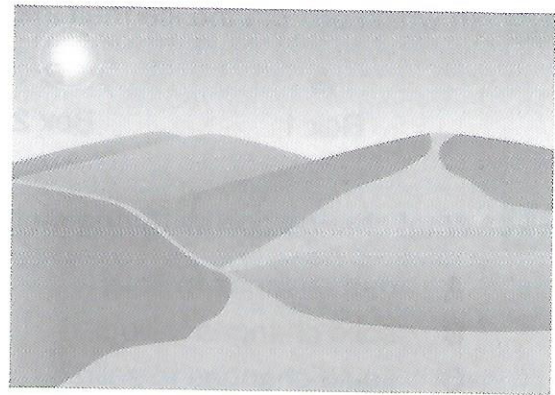
16 Why is the copper wire covered in plastic?

- A Plastic is light in weight.
- B Plastic does not melt when heated.
- C Plastic comes in different colours.
- D Plastic does not conduct electricity.

17 Sand dunes are small hills of sand found in deserts.

What causes sand dunes to form?

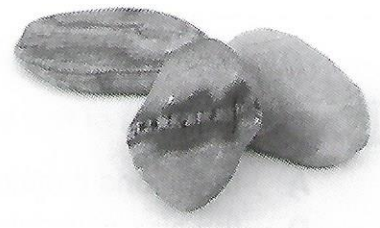
- A wind
- B rain
- C fire
- D sunlight

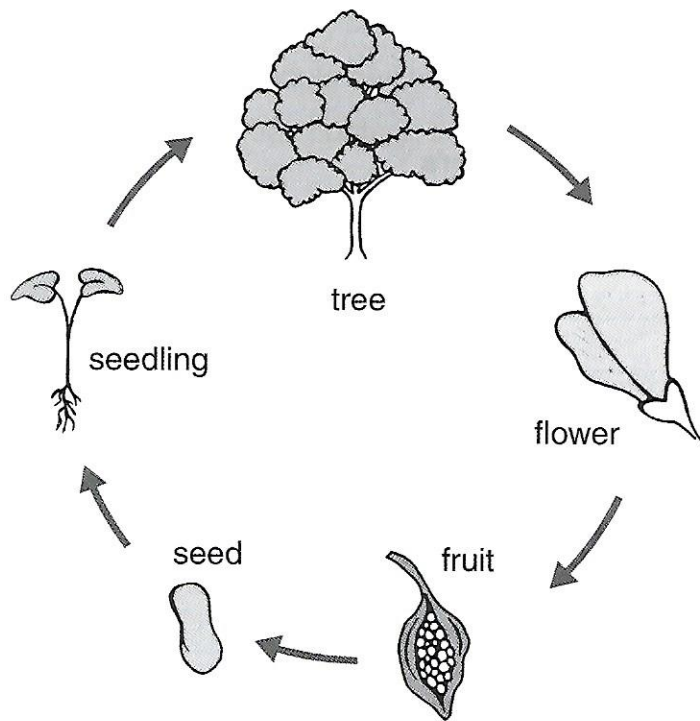


18 Some smooth round stones are found at the edge of a river.

Why are the stones so smooth?

- A They have always been like this.
- B Wind blowing down the river valley smoothed the stones.
- C They were worn smooth by sand moving in the river.
- D Animals digging in the river bed smoothed the surface of the stones.





**Life cycle of a plant**

**19** What is true for this life cycle?

- A A fruit produces a flower.
- B A seedling produces fruit.
- C A seed produces a new plant.
- D A flower produces a new tree.

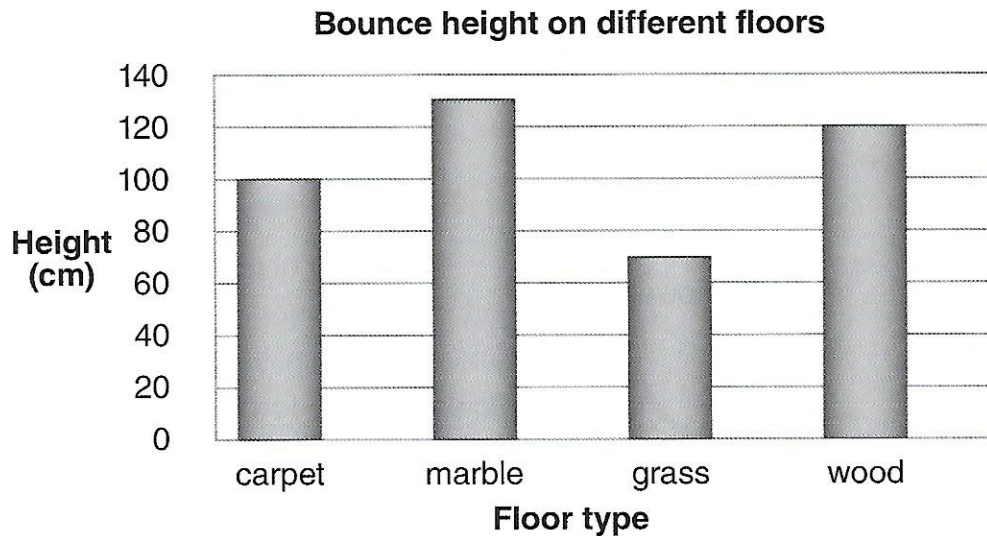
**20** At which stage of the life cycle do insects help the plant reproduce?

- A flower
- B fruit
- C seed
- D seedling

**21** Which part of the plant makes food for the plant?

- A flowers
- B leaves
- C seeds
- D roots

John dropped a football from the same height onto four types of floor. He measured how high the ball bounced on each floor.



**22** How high was the biggest bounce?

- |          |          |          |          |
|----------|----------|----------|----------|
| <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> |
| 100 cm   | 120 cm   | 130 cm   | 140 cm   |

**23** On which floor did the ball bounce the **least**?

- |          |          |          |          |
|----------|----------|----------|----------|
| <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> |
| carpet   | marble   | grass    | wood     |

**24** What made John's experiment fair?

- A** He dropped the ball from the same height each time.
- B** He used a football that was not fully pumped up.
- C** He dropped the ball onto different floors.
- D** He used a wooden ruler to measure the height the ball bounced.



Rita turns on a hair dryer and points it upwards.  
She puts a table tennis ball in the air stream and lets go of it.  
The table tennis ball floats in the air above the hair dryer.



**25** What is holding up the table tennis ball?

- A magnetism
- B electricity
- C moving air
- D gravity

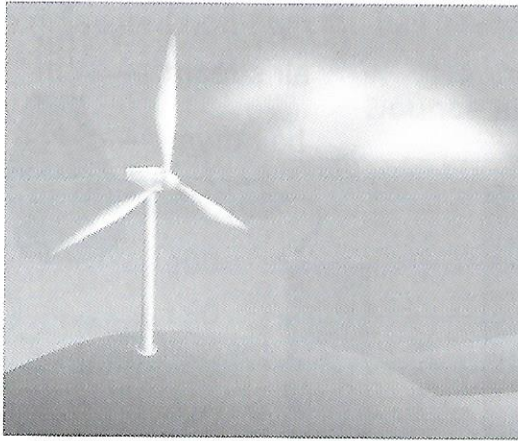
**26** Rita tests other objects to see if they float above the hair dryer.  
She records her results in a table.

Object	Observation
table tennis ball	moves upwards
golf ball	falls to the ground
sheet of paper	moves upwards
balloon filled with air	moves upwards
basketball	falls to the ground

From these results, which of these is most likely to affect whether an object can stay in the air?

- A mass
- B volume
- C shape
- D colour

The picture shows a turbine.



**27** Which energy source causes the turbine to spin?

- A electricity
- B moving air
- C natural gas
- D moving water

Many animals live in forests.

The table lists some animals and their main food source.

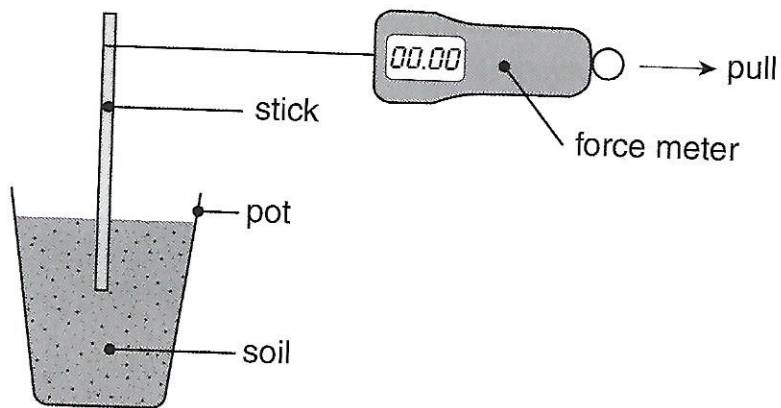
Animal	Food Source
tiger	deer
elephant	grass/leaves
snake	rat
crane	fish

**28** How many meat-eaters are listed in the table?

- A one
- B two
- C three
- D four

**29** Which of these is most likely to happen?

- A If there are more tigers then there will be more deer.
- B If there are more snakes then there will be fewer rats.
- C If there are fewer fish then there will be more cranes.
- D If there are fewer elephants then there will be less leaves and grass.



Mary tests four different soils.

She measures how much force is needed to pull a stick out of the soil.

Soil type	Force needed to pull out stick (N)
sand	25
loam	30
clay	45
gravel	30

**30** Which type of soil was the strongest?

**A**  
sand

**B**  
loam

**C**  
clay

**D**  
gravel

**31** Mary put a small amount of water into each pot.

She then measured how much force was needed to pull the stick out.

The force was less than when the soil was dry.

What is the best reason for needing less force with wet soil?

**A** The water made the soil lighter.

**B** The water made the soil slippery.

**C** The water made the stick heavier.

**D** The water caused the stick to float.

Recycling occurs when an object is broken down and made into something new.

**32** Which of these are reasons for recycling?

Select the correct row.

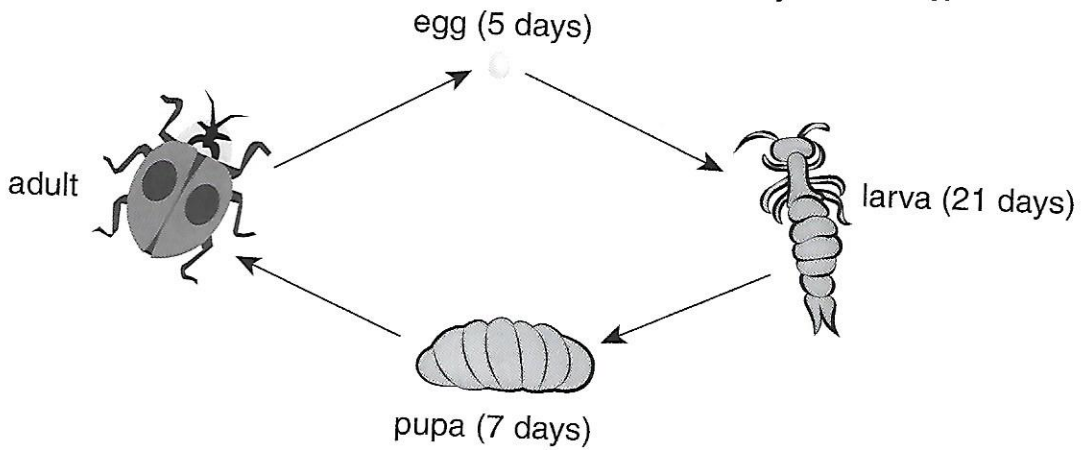
	To re-use the materials	To conserve natural materials	To reduce the amount of landfill waste
<b>A</b>	no	yes	no
<b>B</b>	yes	yes	yes
<b>C</b>	no	no	no
<b>D</b>	yes	no	yes

**33** Which of these materials can be recycled?

Select the correct row.

	Paper	Aluminium	Glass
<b>A</b>	no	no	no
<b>B</b>	no	yes	no
<b>C</b>	yes	no	yes
<b>D</b>	yes	yes	yes

The picture shows the stages in the life cycle of a ladybird beetle.

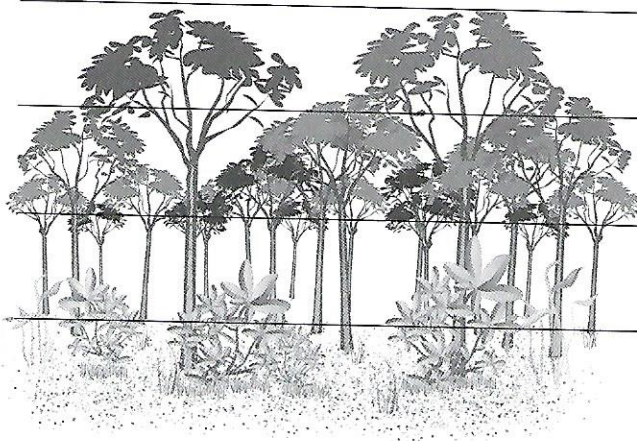


- 34** What are the longest and shortest stages shown in this life cycle? Select the correct row.

	Longest stage	Shortest stage
A	larva	egg
B	egg	pupa
C	pupa	larva
D	egg	larva

- 35** What does the picture show?
- A how long ladybirds live
  - B the size of male and female ladybirds
  - C how a ladybird's diet changes throughout its life
  - D how a ladybird looks at different stages of its life

The picture shows the layers of a rainforest and the animals found in them.



1 – Emergent: bird, bat

2 – Canopy: snake, monkey, bird, tree frog, insects

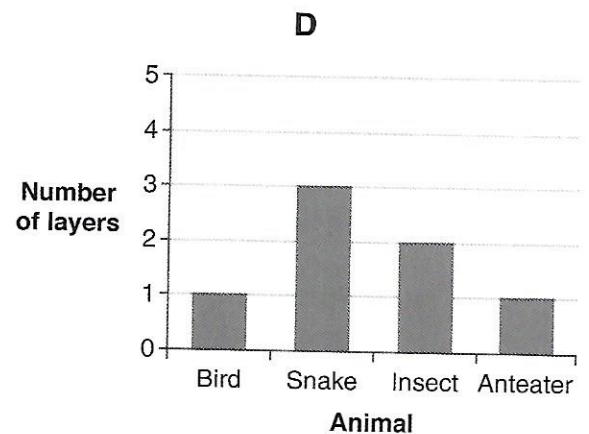
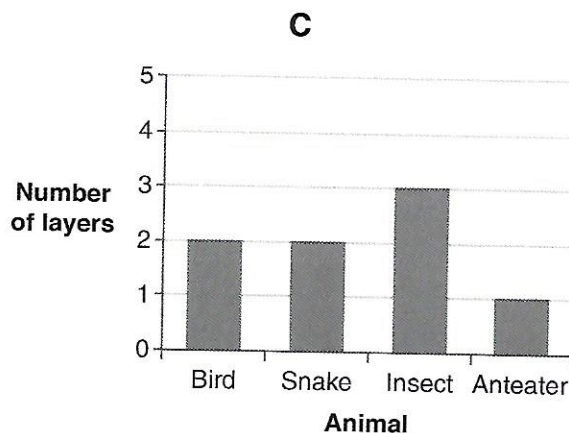
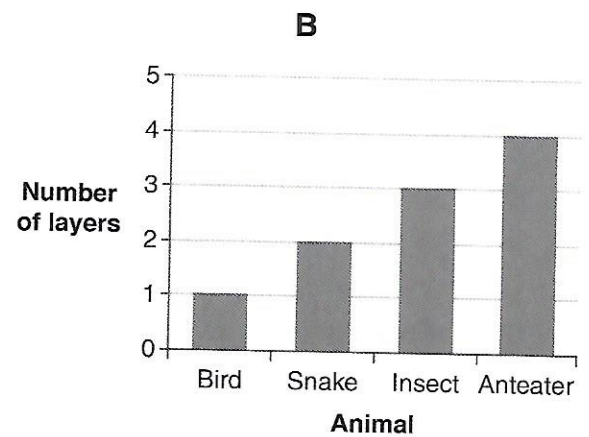
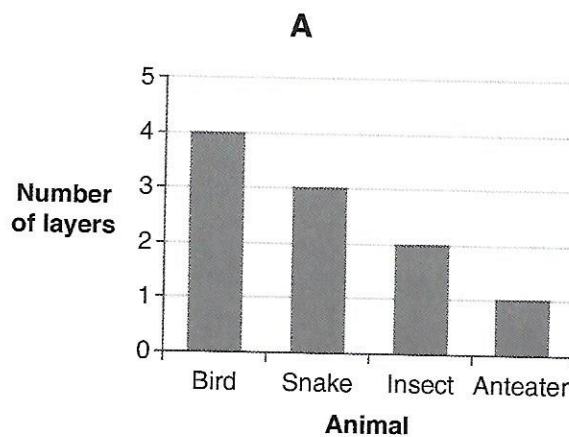
3 – Understory: snake, lizard, insects, tree frog

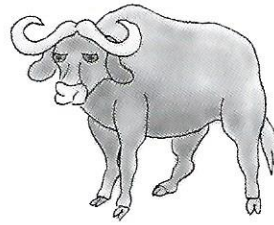
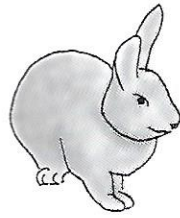
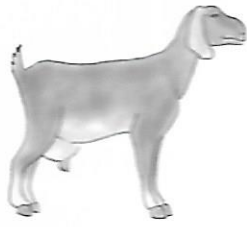
4 – Forest floor: insects, anteater

36 Which of the following statements is true?

- A Tree frogs are found in layer 4 of rainforests.
- B Birds are found in layers 1 and 2 of rainforests.
- C Insects are found in all the layers of rainforests.
- D Anteaters are found in layers 2 and 3 of rainforests.

37 Which graph correctly shows the number of layers where animals can be found?





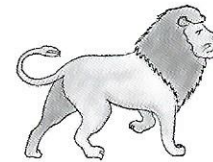
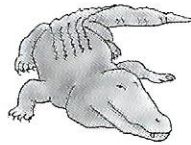
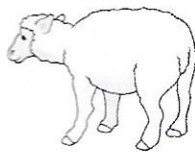
**38** Which of these eats the same type of food as the animals above?

**A**

**B**

**C**

**D**



The table lists the properties of four substances.

Substance	Is it hard or soft?	Is it waterproof?
rubber	soft	yes
cotton	soft	no
ceramic	hard	yes
wood	hard	no

**39** Look at the table. Which of these is most like cotton?

- A plastic
- B porcelain
- C steel mesh
- D tissue paper

**40** A house roof can be covered with ceramic tiles or rubber sheet.  
Which useful property do they both have?

- A waterproof
- B hard
- C colour
- D soft

