

JUNIOR LYCEUM ANNUAL EXAMINATIONS 2004

Educational Assessment Unit – Education Division

FORM 2

INTEGRATED SCIENCE

Time 1hr 30 min

Name _____

Class _____

ANSWER ALL QUESTIONS

1) You can catch diseases from other people.

a) Underline the **three** diseases which you can catch from other people.

toothache

flu

broken arm

AIDS

measles

3 marks

b) Rachel and Claire made a poster about things that prevent disease.

Complete the poster below by writing the correct phrases from the list:

Washing hands

Eating less sugar

Not smoking

Sneezing into your handkerchief

Eating enough fibre

Doing regular exercise

Keeping Healthy



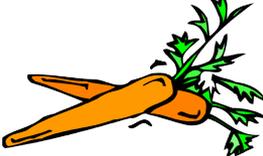
.....
reduces the spread of colds and flu

.....
reduces the risks of food poisoning

.....
reduces the risks of lung cancer



.....
reduces the risks of tooth decay



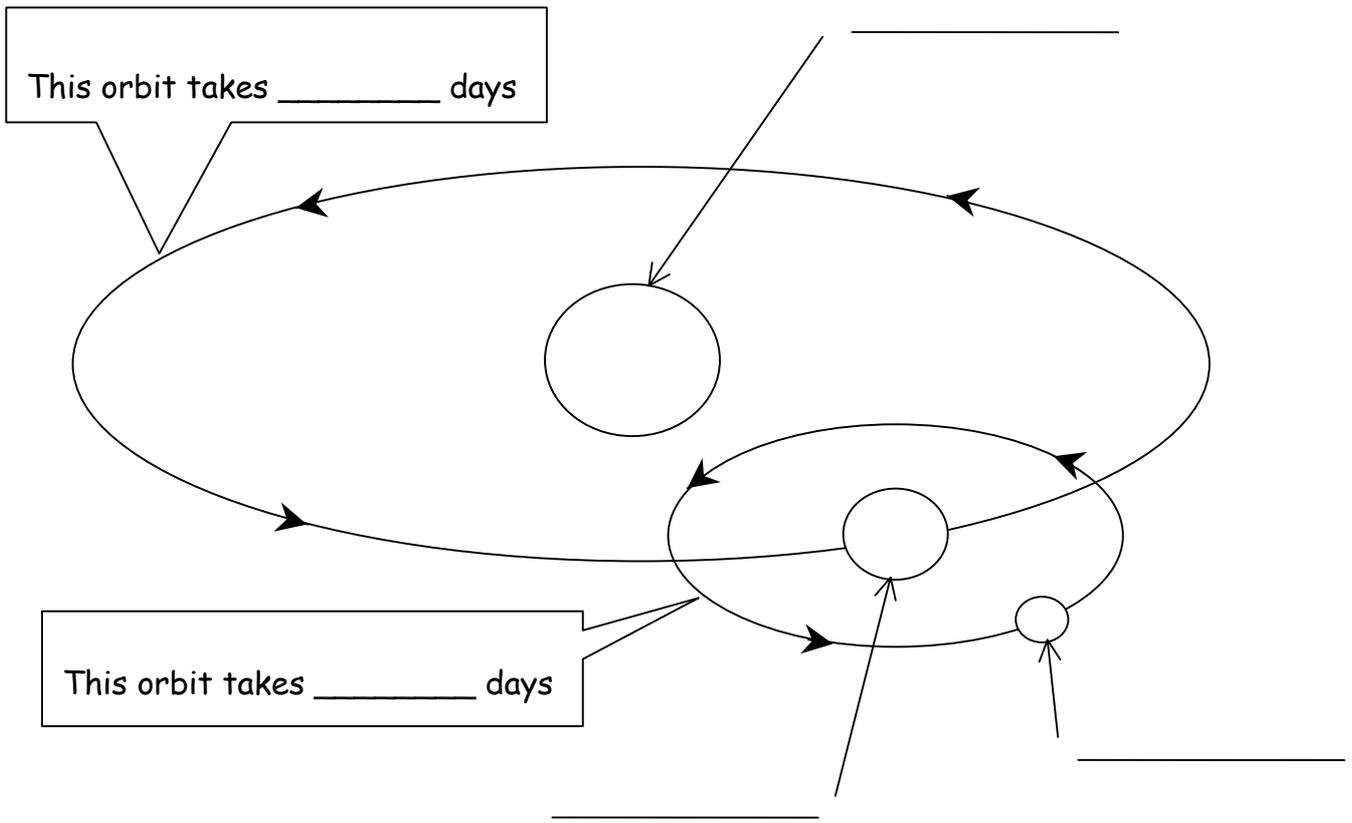
.....
reduces the risks of constipation

.....
reduces the risks of a heart attack

6 marks

2) The Diagram shows the Sun, Earth and Moon and two orbits (not drawn to scale).

a) Label the diagram and fill in the blank spaces.



5 marks

b) Which **force** keeps the Earth and the Moon in their orbit? _____
1 mark

c) Give the name of **one** planet in the Solar System that is **closer** to the Sun than the Earth.

1 mark

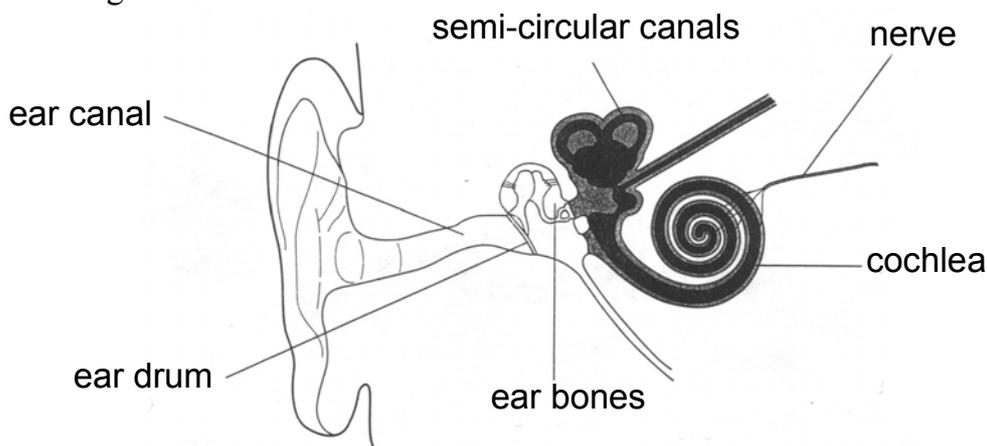
d) Give the name of **one** planet in the Solar System which is **colder** than the Earth.

1 mark

e) Night-time is when Malta is in the dark side of the Earth. Daytime is when Malta is facing the sun.
Explain why Malta has both day and night.

2 marks

3) This is a diagram of the ear.



In the table below write the part of the ear, which does each of the following jobs.

Job	Part of the ear
a) This carries signals to the brain.	
b) Sound waves go down this tube.	
c) These 3 small bones pass on vibrations from the ear drum.	
d) This is a coiled tube which picks up vibrations and sends signals along a nerve.	
e) This is a tight skin. Sound waves make it vibrate.	

5 marks

4) a) From the words below write down the words that matches each of the sentences below.

vibration

image

vacuum

fire

- Light can travel through this.

- This is a source of light.

- This is seen in a mirror.

3 marks

b) Matthew saw a flash of lightning.

One second later he heard the thunder.

i) Why did Matthew hear the thunder after he saw the flash of lightning?

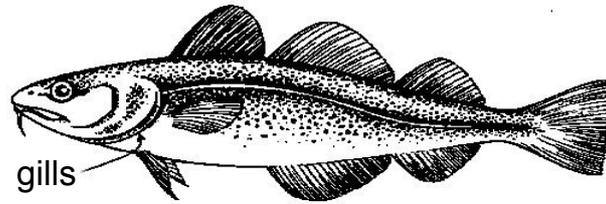
2 mark

ii) When Matthew saw another flash there was a **three** seconds delay before he heard the thunder.

What did this tell you about the lightning?

2 marks

5) The drawing shows a fish called a cod.



Match each fact about the cod, to the way it helps the cod to survive.

Write the correct number in the middle column.

Fact about the cod

- 1) it has gills
- 2) it has a tail and fins
- 3) it's body is covered with scales
- 4) it lays many eggs

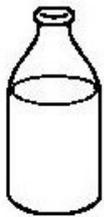
How it helps the cod to survive

- to protect the body
- so that some young cod live
- to breathe in water
- to move easily in water

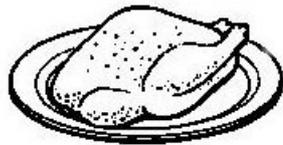
4 marks

6) A balanced diet contains a variety of foods.

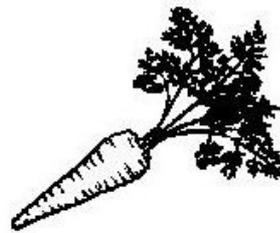
The drawing show 4 different foods.



Milk



chicken



carrot



vegetable oil

a) Which of these foods is the **best** source of:

- i) fibre? _____
- ii) calcium? _____
- iii) protein? _____

3 marks

b) Which of the above food does **not** contain fat? _____

1 mark

c) Why do we need proteins in our diet?

_____ 2 marks

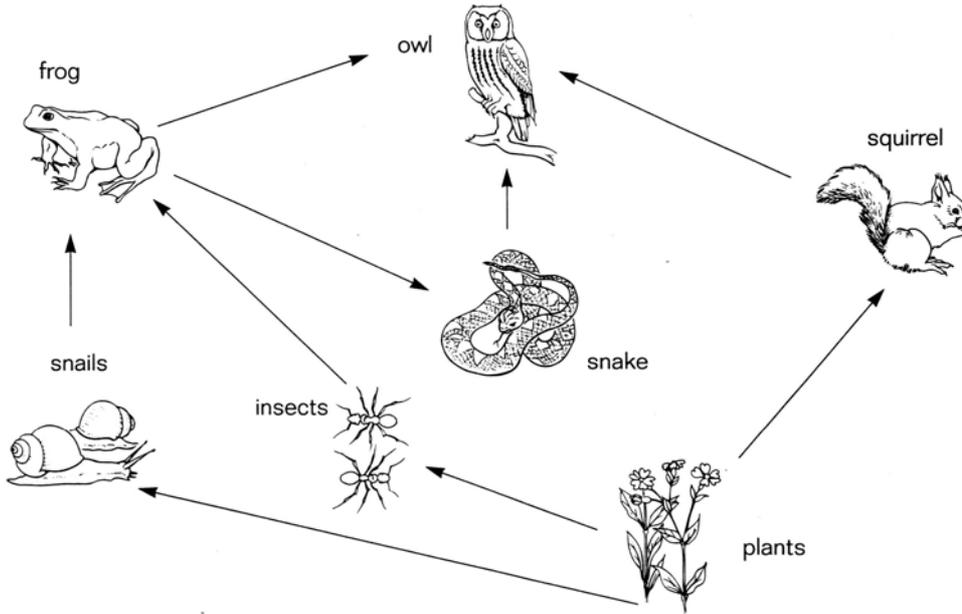
d) Which other nutrient besides fat gives us energy?

_____ 1 mark

e) Why is a baby fed on milk only in the first months of its life and still grow healthy?

_____ 2 marks

7) Look at the food web then answer the questions below.



a) Fill in the spaces to form food chains from the above food web.

Plants → _____ → owl

Plants → _____ → _____ → owl

Plants → _____ → _____ → owl

Plants → _____ → _____ → _____ → owl
8 Marks

b) What happens to the snakes if all the frogs die?

1 mark

8) Read the passage, then answer the question below.

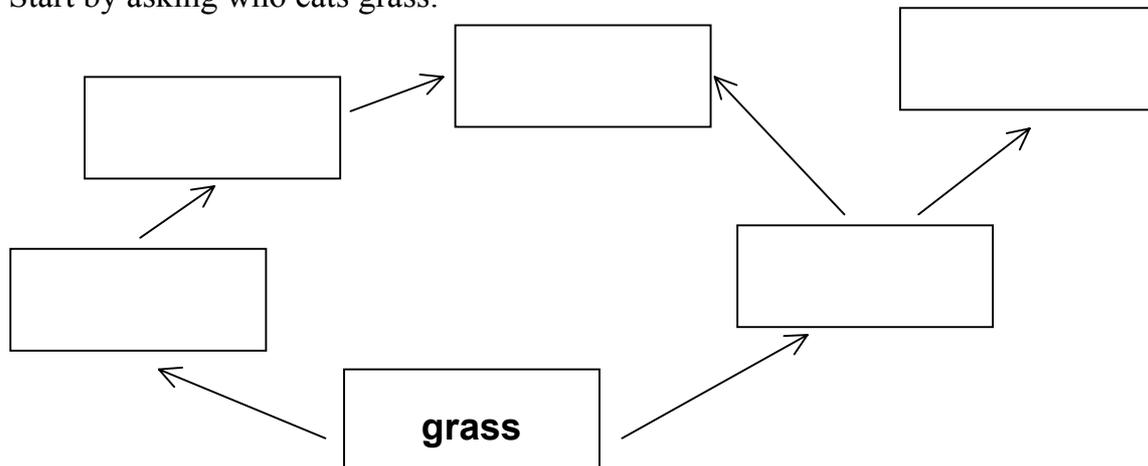
Foxes hunt rabbits.

The **hawk** catches **rabbits** and birds like the **thrush**, which feeds on **slugs**.

The **slugs** and the **rabbits** both like grass.

Fill in the food web with the names of the animals in the passage.

Start by asking who eats grass.



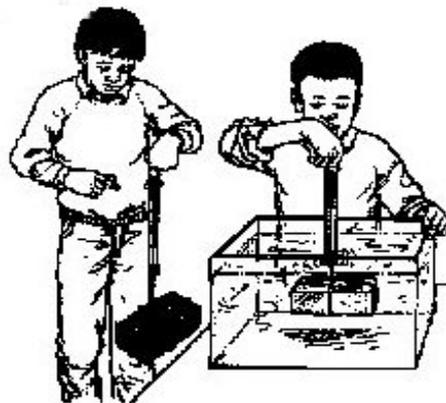
5 marks

9) Matthew and Paul are weighing a rubber brick and a house brick using a forcemeter.

First they weigh the bricks in air, and then they weigh them in water.

In air the forcemeter reads 35N with the rubber brick and 30N with the house brick.

In water the forcemeter reads 10N with the rubber brick and 12N with the house brick.



a) Complete the table to show the readings on the forcemeter

Reading on forcemeter in N		
	rubber brick	house brick
In air	_____	_____
_____	_____	_____

5 marks

The forcemeter spring is stretched when a brick is hung on it.

b) Name the force which pulls the brick down. _____
1 mark

c) Why are the readings on the forcemeter different for the rubber brick and the house brick?

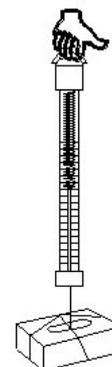
2 marks

d) Why are the forcemeter readings greater in **air** than in **water**?

2 marks

e) The brick in the diagram is **not** moving.
There is a force up and a force down acting on the brick.
Tick the correct statement.

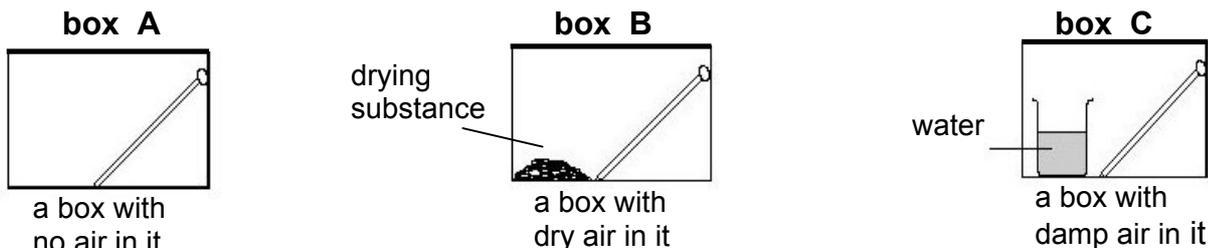
- The force down is bigger than the force up.
- The force up is bigger than the force down.
- The force up is the same as the force down.
- The force up is twice the force down.



1 mark

10) Three shiny iron nails are put in small sealed plastic boxes and left there for a few days.

The labels show what else is in each box.



a) i) In which **two** boxes will the iron nail **not** rust? _____ 2 marks

ii) Why will the nail rust in the other box? _____ 2 marks

iii) Which **two** elements are taking part in this change? _____, _____ 2 marks

iv) Write the **word equation** for this change. _____ 3 marks

b) Many parts of a bicycle are made of iron. These parts can rust easily. Give two ways to stop these parts rusting.

1. _____ 2. _____ 2 marks

11) Burning a piece of paper is a **chemical change**.

There are 3 things needed for burning: **fuel + heat + oxygen**.

To put out a fire, you have to remove one of the above things

The pictures below show how you can put out different types of fires.

a) Draw lines to link each picture to 'what is removed' in each fire.

Fire	How to put it out	What is removed
Chip pan on fire 	Cover it with a damp cloth	heat
bonfire 	Throw cold water on it	fuel
Woodland on fire 	Cut down some of the trees ahead of the fire	air

3 marks

b) The following is a list of changes. Underline the ones which show a **chemical change**.

- Diluting orange juice with water
- Heating soup
- Burning petrol in a car engine
- Making aluminium cans from a block of aluminium
- Eating a chocolate
- Iron going rusty
- Respiration in the body
- Breaking glass

12) a) Vinegar is sometimes put on chips. It has a **sour taste**.

What does the taste tell you about vinegar? Tick the correct box.

It contains salt It is an acid It contains sugar

1 mark

b) Red cabbage can be used to test for acids and alkalis.

It is bright red in acids and purple in alkalis.

i) What colour is it in lemon juice? _____

1 mark

ii) Complete the sentence below.

Substances, which change colour when you add acid or alkali, are called

2 marks

c) The labels have fallen off two bottles.

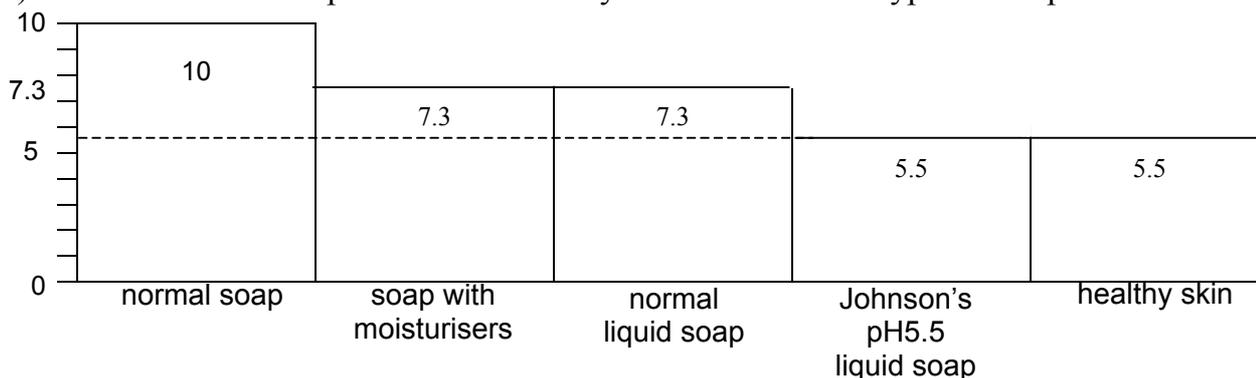
The labels say 'Distilled Water' and 'Sulphuric Acid'.



Why should you **not** taste the liquids to see which is which?

1 mark

13) The chart shows the pH values of healthy skin and different types of soap.



a) Use the information in the above chart to answer the following questions.

i) Name **one** substance that is **almost** neutral. _____

1 mark

ii) Name the substance that is **most** alkaline. _____

1 mark

iii) What does the chart tell you about healthy skin?

1 mark

iv) Which of the soaps is **acidic**? _____

1 mark

b) Why is Johnson's liquid soap better than other soaps?

2 marks

c) When a bee stings, it gives out an **acidic** liquid.

Which **one** of the substances given in the chart would be best to **neutralise** the sting?

2 marks