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Notes From The Editors

Dear Readers,
Do you realise that we have made changes in the colour, illustrations and contents of The Young Scientists L2? We hope you do like the changes. Nevertheless, if you do have interesting and creative ideas to help make The Young Scientists Level 2 even better, don't hesitate to tell us through email. We really want to bring you the best science magazine for you to enjoy!

The Young Scientists Level 2 (66)

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Mica (P): 1446/6/2003
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Washing Labels

Oh no! What has become of my blue skirt?

What's the matter, Celine?

How did it become like this? This is my favourite skirt!

Here, let me have a look.

Did you soak it in bleach?

No wonder! This skirt should not be washed in bleach! Didn't you refer to the washing label?

Oh, I didn't know that. Besides I don't quite understand what the label says.

The meanings of the symbols on the washing label are as follows.

- Machine Wash - warm
- Do not bleach
- Tumble dry - low heat
- Steam or dry iron medium heat

Of the four symbols on the label, I only know the one on ironing.

Alright, let me familiarise you with the symbols on the label.

Generally, the symbols refer to:

- Washing
- Bleaching
- Drying
- Ironing
- Dry cleaning

Vocabulary:

- **bleach**: strong chemical used to remove stains and make white clothes whiter
- **ignorant**: not having knowledge about things one should know
- **familiarise**: explain and show meaning of something well
Some of the symbols below are found on the labels of your clothes. Refer to the symbols on the washing labels of your clothes to the list below and familiarise yourself with them.

- Machine wash, Cold
- Machine wash, Warm
- Machine wash, Hot
- Machine wash, Permanent Press
- Machine wash, Gentle cycle
- Hand wash
- Do not wash
- Do not tumble dry
- Low heat
- Medium heat
- High heat
- Iron, steam or dry, with Low heat
- Iron, steam or dry, with Medium heat
- Iron, steam or dry, with High heat
- Do not iron
- Do not iron with steam
- Do not shape
- Dry clean
- Bleach as needed
- Non-chlorine bleach as needed
- Do not bleach

Vocabulary:
- Tumble dry: the clothes in a washing machine
- Permanent press: clothes that need no ironing

Think about it!
1. What are washing labels?
2. What advantages do they serve?
3. Who should pay attention to the washing labels on the clothes?

Vocabulary:
- Mess up: make a mistake or do something badly
- Advantages: good features or benefits
Transferring Water

Ashley puts a bottle and a mug on the table.

Can you fill the mug with water without tilting the bottle?

Of course!

Readers, how will you fill the mug with the water?

(The answer is provided on the inner page of the back cover.)
Calling... Astronavigation research centre... Space launch is successful...

All operations on spacecraft... A-okay! Voyager out...

Let’s go to the cabin for a break.

Alright, be with you shortly!

Ash, do you know who was the first astronaut to venture into outer space?

Of course I do! He was a Russian cosmonaut, Yuri Alekseevich Gagarin.

On 12 April, 1961 he made the first manned space flight, completing a single orbit of the Earth in 108 minutes. He fulfilled Man’s dream of conquering outer space.

Vocabulary

astronavigation: expedition into outer space
research: study of something in order to discover new facts

Think about it!

Why are astronauts able to float in the cabin of their spacecraft?
Yuri Gagarin's achievement in space is a giant step for Man's adventure into outer space.

Before Yuri was selected to train as a cosmonaut, he was a fighter pilot who had clocked only 230 hours of flight time.

In the selection process, only 20 candidates out of 3400 were chosen to enter the final phase of training. Yuri was one of the 20 chosen candidates.

During his training, Yuri showed great fortitude, confidence and optimism. He possessed a great physique and a sharp mind. As a result he was selected to be the first cosmonaut.

During his orbital flight of 40,000 metres, he did not suffer any ill effects to his health although he was in a state of zero gravity.

He touched down safely in Moscow, Russia and news of his exploits was published in all the newspapers around the world.

I consider Yuri my hero too!

Spaceship Vostok I

Utility Cabin

Protective coating on spaceship for re-entering Earth's atmosphere

This spacecraft that sent Gagarin into space is called Vostok I.

Vocabulary

achievement: successful venture
fortitude: brave and determined attitude

zero gravity: state or condition where gravity does not exist
exploits: great achievements
Unfortunately, that was the first and last time Gagarin went into outer space. In 1968, he died in a crash while testing a plane.

To commemorate his contribution to the space programme, a monument measuring 40 metres high was built and a statue 12 metres high was erected at the monument.

The world will always remember Yuri Gagarin.

Mr Tortoise, how about a contest to see who has more energy?

What? Another contest? Aren't you afraid of losing again?

There are two boxes of the same weight except that one has four wheels and the other does not. Each of the four wheels weighs 100 g. Let's see who can push the furthest. You pick the box first.

Each box weighs 50 kg. The box with the four wheels will be heavier by 400 g. I guess the box without the wheels will be lighter and easier to push.

Let's continue with our space exploration.

Vocabulary:

- **commemorate**: held a special ceremony, or have object to remember an important person
- **contribution**: some great things done or left behind

**energy**: physical power that you have for doing things that need physical effort
Alright, I shall pick the box without the wheels. By the way, who will be the umpire?

What about you, Mr. Horsey?

Well, alright!

I’m going to beat Mr. Hare one more time.

Ready, get set, go!

I’ve pushed with all my might and yet I lost to the hare.

The winner of this contest is Harry the hare.

It’s your turn to lose to me!

It’s not fair. The box you pushed is much lighter than mine.

Vocabulary

umpire: person who makes sure that players obey the rules in a contest

might: great force
The two boxes are of the same weight. I've checked the two boxes earlier.

You lost because your knowledge of science is shallow. How much do you know about the subject of mechanics?

Huh?

It was Isaac Newton who introduced 3 ideas about force known as the motion of force. Thus the unit of force is measured in a Newton.

One Newton is the force needed to accelerate the speed of a 1kg object by 1m/s².

Every moving object on a surface encounters a frictional force.

Every moving object has a combination of forces acting on it. It could be gravitational force, push and pull forces or frictional force. A frictional force acts in the direction opposite to that of the object.

The rougher the surface the greater the frictional force.

An object moving on a rough surface will meet with less frictional force or resistance if it is fitted with wheels or rollers.

If the object is moving on a smooth surface, the force of resistance is less and wheels may not be needed.

Vocabulary

mechanics: part of physics that deals with the natural forces that act on moving or stationary objects
force: power or strength which something has

accelerated speed: increase
frictional force: resistance force of one surface to another surface or substance that moves on it.
Wouldn’t it be better if there were no frictional force in the world? All things will move smoothly.

Such a concept is not correct. If there is no resistance, the surface will be very smooth and it will be impossible to move on it. Buildings will not be able to stand.

Science is related to our everyday life. We need to study it to understand the things around us.

It looks like I have to read more on science.

World Of Spirals

Henry, why are you staring at the sink?

Eh?

Mum, the water whirls in a fascinating manner out of the sink.

Tell me, what other things you know show a spiral pattern?

The seashell and the galaxy both have spiral patterns.

Vocabulary

spiral: continuous curve that goes round and round from a central point
Spiral patterns in nature

The spiral pattern looks round but it is not. A spiral pattern has a starting point and an end. However its end can continue infinitely.

You're right! If you observe your surroundings carefully, you'll come across many natural things that are spiral.

This is an aloe vera plant. The leaves are so arranged that they receive equal amounts of sunlight.

This bamboo plant spirals towards sunlight.

Natural spiral patterns can be seen in animals and plants. Spiral patterns can also be seen in the human body.

The spiral shell of a snail enlarges with the body.

Look at the central disc of the daisy which is made up of tiny flowers known as florets. The florets are arranged in a spiral to provide equal opportunities for pollination.

Young spiral shoot of a fern.

Observe that the mouth part of a butterfly is curled up into a whorl to save space.

Vocabulary

<table>
<thead>
<tr>
<th>word</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>infinitely</td>
<td>without end</td>
</tr>
<tr>
<td>floret</td>
<td>tiny flower</td>
</tr>
</tbody>
</table>

Whorl pattern on the crown

Double-helix DNA molecule

Vocabulary

molecule: smallest unit into which a substance can be divided without a change in its chemical nature
Henry, do you know what 3-D spirals can cause disaster?
Mmm... is it the whirlwind?

This type of spiral is caused by spinning air or water. The tremendous energy that is produced can destroy buildings and trees.

Besides natural spirals, there are also man-made spirals.

It is because we like a variety of patterns and designs. Spiral designs are used for decorations.

Which bus is faster and which bus is slower?

Vocabulary:
- tremendous: very great, immense
- whirlwind: tall column of air which spins round and round very fast and moves across land or sea
The goat races with the rabbit

Hello, I'm a newborn harp seal pup. Let me tell you the story of my life.

Look at my coat of yellowish white fur. It blends well with the snow and ice around me to protect me from my enemies.

Vocabulary:

pup: young seal

Readers, do you know how many metres Nanny ran in 1 minute?

(The answer is provided on the inner page of the back cover.)
For the first 12 days after my birth, I'll depend on my mother’s milk for nourishment because I have not learnt to swim or find my own food. So all I do during this time is to drink my mother’s milk and snooze.

I have yet to see or know my father since my birth. My mother brings me up as a single parent. According to my mother, my father is probably frolicking in the sea with his buddies.

I look very thin at birth but will put on two kilograms in a day after I start drinking my mother’s milk.

I'll grow fatter as days go by and my mother will grow thinner.

My mother’s milk contains 45% fat which is 10 times the amount found in cow’s milk. This helps my body to rapidly develop a thick layer of fat beneath my skin to protect me from the freezing cold.

**Vocabulary**
- **nourishment**: food or the substances in food that are necessary for growth and health
- **snooze**: to sleep for a short period of time, especially during the day
- **frolicking**: playing around happily
- **beneath**: directly under something or at a lower lever
Excuse me, I need to get some shut-eye.

While I'm taking my nap, Mum goes into the sea to hunt for food. Alright, I'll have my forty winks now...

The air around is cold and fresh.

My mother needs to come up to the surface of the water to breathe every 10-20 minutes. That's why she usually makes a hole in the ice so that she can put her head through the ice to breathe when she surfaces.

Seals have acute sense of hearing. Although there are many pups born at the same time on the floating ice, a mother seal and her pup can pick out each other's voice or sound. Besides, the mother seal can recognize her pup by sniffing.

I'm most terrified during a snow storm. However my mother assures me that all will be fine if I remain on the floating ice. She is nearby in the water watching over me.

<table>
<thead>
<tr>
<th>Vocabulary</th>
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<tbody>
<tr>
<td>forty winks: short nap</td>
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</table>

<table>
<thead>
<tr>
<th>Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>nap: to sleep for a short period of time usually during the day</td>
</tr>
<tr>
<td>sniffing: smelling to determine scent</td>
</tr>
</tbody>
</table>
You may be wondering why my mother does not take me with her into the water during a snow storm. Well, this is because I’m still weak and not able to move well.

Seals resting on floating ice.

Twelve days after birth, I’ll be faced with a daunting challenge. My mother will lead me into the water to teach me to swim. Seals are unlike other marine animals. We cannot swim at birth but need to be taught.

4th-15th Day after birth.

Three weeks after birth.

When my old coat is completely replaced (25 days after birth) there will be a band of small dark spots along each side of my body and on the back. The band of dark spots form a pattern of a harp and that’s how we get our name.

While I’m moulting, I’ll stay on the ice weaning. During this time I will lose some of my body fat. When I’m completely moulted, I shall go into the water to hunt for fish, shrimps and crabs.

We are adept swimmers. We need only to flip our tail fin from side to side to move. Our top speed is between 20-30 km per hour!

Vocabulary:

daunting: something that is frightful and worrisome

Vocabulary:
adept: skilful at doing something
Harp seal information

- Other common names: Greenland seal, saddle seal.
- Family Phocidae
- Land-based flesh eating mammals.
- Found in the Arctic and sub-Arctic waters of the North Atlantic Ocean.

Migration of Harp Seal

- December to end of January: Harp seals breed in Labrador and Gulf of St. Lawrence river.
- February and March: Female harp seals give birth in Newfoundland and the Gulf ice floes.

Harp seal, the fin-footed animal

- The Harp seal is a marine mammal that belongs to the suborder Pinnipedia (fin-footed animal that swims in the seal). The walrus and sea lion are also fin-footed animals.

The beauty on Earth will soon be destroyed....

What can I do if Earth is bent on self-destruction?

Dear humans, the natural disasters are not of my doing but you are the main cause. You have no love for Earth and therefore it is pointless for Earth to exist.
The future of Earth lies with you! Repent before it's too late!

I won't burn rubbish in the open anymore.

From today I shall stop throwing plastic bags into the drain.

I regretted that I had thrown garbage into the rivers. I promise I won't repeat such acts.

Let's clean up the drains now!

I shall innovate and improve my factory's system of waste disposal so as not to pollute the environment.

We should not be felling trees in the forests for profit and selfish reasons. We ought to embark on a forest replanting scheme.

I shall service my bus more often so that the engine does not emit black smoke into the atmosphere.

Smoking is unhealthy! I shall stop smoking.

I'm in the process of inventing an engine that uses solar energy. I want to replace engines and machines that contribute to environmental pollution.

We are members of the International Love Your Environment Society. We launched the 3R activities (Reuse, Recycle and Reduce) which include collecting all used objects and materials to recycle them.

The world has a population of 65 billion people and if everyone will make an effort to recycle for one day, it will help to reduce global waste.

Don't wait until it's too late. Be on the watch for activities that are damaging to the environment. Let's work together to keep the Earth safe to live on.

As long as Earth exists, it's our duty to love it by keeping it clean.

Vocabulary

process: a series of actions done to achieve something
solar energy: energy comes from the sun
contribute: add!
You are a member of the Love Your Environment Society? Do you know the responsibilities of carrying out the 3R activities?

Of course I do. But we need to practise the 3R concept everywhere and everytime.

I won’t use a plastic bag if I can carry the things I buy with my hands.

I will use my own containers when I buy food instead of using polystyrene boxes provided by the vendors.

I sort out my recyclable rubbish into four categories. They are glass, plastic, aluminium and paper.

My father will send them to the recycling centre.

Mum, I made this model aeroplane from recycled paper and used aluminium cans at the school workshop exhibition.

That’s great! You are using recycled materials to conserve our resources.

Vocabulary

concept: idea of something that exists
conserve: to save and protect from being damaged
polystyrene: man-made substance that does not allow moisture or chemicals to pass through it
resources: things needed by people to achieve what they want

At last there is hope for Earth.

After a few episodes of natural disasters, humans are beginning to realise their mistakes. It is hoped they will continue to protect and conserve the Earth.

Do humans prefer to live in a world that is clean, beautiful and serene or one that is dirty, polluted and stinky? I think you know the answer!

It is my hope that every human has learnt his lesson well and will continue to protect the Earth. I don’t wish to return to this planet to vent my anger on the inhabitants again! Goodbye citizens of Earth!
Brother, I can sense the anger of nature and its message...

I felt that way too... we need to be more responsible in the way we treat Earth. I hope that I get to breathe fresh air every morning when I wake up and see blue skies above me.

That night the continuous rain washes away the dirt from the Earth and from also man’s heart...
The Earth is home to a variety of plants and animals. The Earth does not belong only to humans but to all living things. So humans have no moral right to destroy Earth!

Cracked Glass

Daniel uses 2 glasses of the same size for an experiment. First, he puts a metal spoon into one of the glasses. Then he pours hot water (100°C) into both glasses. Which glass is likely to crack?

(The answer is provided on the inner page of the back cover.)
Buying A Flower Vase

Angel bought a flower vase at a discounted price. Many of her friends came to their own conclusions.

I bought this flower vase at 20% cheaper than the original price. I saved $30.00.

So... she saved 20% from the original price.
Angel paid only 80% of the original price.
That is not so. It's 0.2 cheaper than the original price.
In other words, the vase is two-tenth cheaper than the original price.

How much is the vase after the discount?

(The answer is provided on the inner page of the back cover.)

Dew

The air is so fresh in the morning.
It's cool and clean too!

Brother Ken, our shoes and track bottoms are wet.

Oh, that's due to the dew.

Vocabulary

dew: droplets of water that forms on the ground during the night
What is Dew?

Dew is made of small drops of water that form on the surface of flowers, leaves and grass during the night.

The droplets sparkle like diamonds.

Hey, look at the cobweb! It's peppered with dewdrops.

Formation of Dew

When the temperature of a surface drops...

...the amount of water vapour the atmosphere can hold decreases until a point of saturation called the dew point.

Any further drop in temperature will result in the condensation of excess water vapour into water droplets on the ground or surface of objects known as dew.

Have you understood all this so far?

Think about it!
1. What is dew?
2. When do we see dew on the surface of objects?

Vocabulary

dewdrop: a drop of dew
droplet: a very small drop of liquid

saturation: the process that occurs when something is so full that no more can be added
condensation: the process in which a gas changes into a liquid
Dew forms most readily on those surfaces that lose heat through radiation most efficiently but are still insulated from external heat sources. More dew is formed when the lowest layers of air are more humid, as then they contain more moisture and also prevents evaporation of the dew already deposited below.

Strong winds prevent dew formation because they mix a larger layer of air, creating a combined distribution of heat and water vapor.

During the day the hot sun causes the plants to lose its water content through transpiration and evaporation. So when dew is formed at night on the surface of the leaves, the plants are replenished with a source of water supply.

**Vocabulary**

- insulated: protected
- humidity: the amount of water vapour in the air
- efficiently: rapidly
- replenish: to make something full again or bring it back to its previous level by replacing what has been used
Brother Ken, you have taught me much in just one morning of exercise with you.

If that is so, you should follow me out to exercise more often. Hey, I think it's time we return home before Mum gets worried.

Oh, what a beautiful morning...

Extra Information:
Presence of water vapour in everyday life.

Eating a bowl of hot noodles can cause water vapour to fog up your spectacles.

When you drink a glass of iced cold water you will find water droplets on the outside of the glass.

These happen because the water vapour in the air is cold and condenses to form water droplets.

Vocabulary
presence: the existence of someone or something in a particular place
water vapour: drops of water that exist in the air

ANSWERS

Transferring Water (pg 8)
Just blow into the glass tube. The air pressure inside the glass jar will increase and push the water out of the bottle through the glass tube.

Fast and Slow (pg 25)
Bus A is faster than bus B. This is because the faster a bus is driven, the thinner will be the air behind the bus. This will result in the dust (smoke) rising up higher into the air.

Mathematics Is Fun

The Goat Races With The Rabbit (pg26)
20 metres.

Cracked Glass (pg43)
Glass B is likely to crack because the spoon in Glass A absorbs the heat from the hot water making it less likely to crack than glass B.

Buying A Flower Vase (pg44)
$150.
HOW WELL DO YOU KNOW YOUR SCIENCE? (YEAR 3 NEW SYLLABUS)
Here are a few questions for you.
(With Process Skills)
Topics: 1) Revision

Name: __________________________ Class: __________________________ Date: __________

Section A

1. We have ______ senses altogether.
(1) four (2) five (3) six (4) seven
Process Skills: Communicating and Generating

2. Mother put a plant near the window. Several days later, it bent towards the window.
This shows that ________.
(1) plants always bend towards the light (2) plants want to feel the wind outside
(3) plants want to go out (4) plants can respond to changes around it
Process Skills: Observing, Communicating and Generating

3. Carol and Simon close their eyes and cover their ears. They are able to smell the scent of perfume but cannot tell where the smell comes from. This shows that ______.
(1) we need all the five senses to smell (2) it is easier to smell when you close your ears
(3) the nose helps us only to smell (4) it is easier to smell perfume than other smell
Process Skills: Observing, Communicating and Generating

4. Which of the following statements below is not true about the insect above?
(1) It lives on land. (2) It moves by hopping.
(3) It does not have a backbone. (4) It gives birth to live young.
Process Skills: Observing, Communicating and Generating

5. In humans, some characteristics are passed on from parents to their children. Which of the following can be passed on?
A fingerprints B physical fitness C colour of the skin D features of the face
(1) A and B only (2) B and C only (3) C and D only (4) B, C and D only
Process Skills: Generating and Communicating

6. Which of the following materials is used to make the objects shown?
(1) rocks (2) clay (3) wood (4) cotton
Process Skills: Observing and Generating

7. Which of the following are true of both copper and aluminium?
A They are not widely used. B They break easily.
C They do not rust easily. D They are good conductors of electricity.
(1) A and B only (2) B and C only (3) C and D only (4) B, C and D only
Process Skills: Communicating and Generating

8. The animal in the diagram above has to ________ to become an adult.
(1) change its skin (2) change into an egg
(3) go through one more stage (4) go through two more stages
Process Skills: Observing, Analysing and Generating

9. Plants and animals must ________ in order to maintain the continuity of their species.
(1) migrate (2) live in a habitat (3) eat and drink (4) reproduce
Process Skills: Communicating and Generating

10. Mushrooms are a kind of ________.
(1) bacteria (2) fungi (3) flowering plant (4) microorganism
Process Skills: Observing and Generating

11. Living things need the following to grow and survive except ________.
(1) air (2) food (3) water (4) sound
Process Skills: Communicating and Generating

12. The digestion of food starts in the ________ and is completed in the ________.
(1) mouth; large intestine (2) mouth; small intestine
(3) mouth; stomach (4) stomach; small intestine
Process Skills: Communicating and Generating

13. Which of the following shows the correct stages in the life cycle of a frog?
(1) egg → pupa → tadpole (2) egg → tadpole → frog
(3) egg → tadpole → pupa → frog (4) egg → larva → tadpole → frog
Process Skills: Communicating and Generating

14. Ferns and mushrooms have no flowers. They reproduce by ________.
(1) buds (2) spores (3) seeds (4) stems
Process Skills: Communicating and Generating

15. Which of the following in a human will not change?
(1) weight (2) height (3) fingerprint (4) length of hair
Process Skills: Communicating and Generating

TS. Year 3, p. 66
1. Name the organ in the diagram above.
   a) 
   b) The organ above can determine four different kinds of taste. Name them.
   1) ________  2) ________  3) ________  4) ________
   Process Skills: Observing, Analysing and Generating

2. State one difference between a reptile and a mammal.
   a) 
   b) 
   Process Skills: Communicating and Generating

3. Study the positions of the two magnets above. What happens when magnet A is brought closer to magnet B?
   a) 
   Explain your answer given in (a).
   b) 
   Process Skills: Observing, Analysing and Generating

4. Animals reproduce to maintain the continuity of their species. Name two ways in which animals reproduce.
   a) 
   b) 
   Process Skills: Communicating and Generating

5. Name the plant above.
   a) 
   The plant above does not reproduce by seeds or by spores but by growing from a / an
   (b) 
   Process Skills: Observing, Analysing and Generating

6. Describe the changes that take place in the growth of a baby iguana into an adult.

   Process Skills: Communicating and Generating

7. Our senses are vital and important to us. Give two reasons.
   Process Skills: Communicating and Generating

8. Plastic can endanger the atmosphere. Describe how this can be happen.
   Process Skills: Communicating and Generating

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**HOW WELL DO YOU KNOW YOUR SCIENCE**

**YEAR 3, ISSUE 66**

ANSWERS

| Section A | 1) 2) 3) 4) 5) 6) 7) 8) 9) 10) 11) 12) 13) 14) 15) |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1) 2) 3) 4) 5) 6) 7) 8) 9) 10) |

**Section A**

1. a) Tongue  
   b) (i) sour  (ii) sweet  (iii) salt  (iv) bitter
2. a) Reptiles are cold-blooded animals.  
   b) Mammals are warm-blooded animals.
3. a) Magnet B will move away.  
   b) Because like poles repel each other.
4. a) By laying eggs  
   b) By giving birth to live young.
5. a) Potato  
   b) Underground stem
6. The size and weight of the baby iguana will increase as it grows.
7. Our senses tell us about ourselves and what is happening around us.
8. Burning plastics can produce harmful gases.
HOW WELL DO YOU KNOW YOUR SCIENCE? (YEAR 4 NEW SYLLABUS)

Here are a few questions for you.

(With Process Skills)
Topics Covered: (1) Heat (2) Matter - Changes of state

Section A

For each question from 1 to 15, four options are given. One of them is the best answer. Make your choice (1, 2, 3 or 4). Each question carries 2 marks.

1. Human blood is a red fluid made up of
   (A) plasma (B) plasma and platelets (C) red blood cells (D) white blood cells
   (1) A and B (2) B and C (3) A, B and C (4) A, B, C and D
   Process Skills: Communicating and Generating

2. Study the cross-section of the tree shown. The part X is
   (1) the storage system (2) the heart of the tree (3) the transport system (4) the reproductive system
   Process Skills: Observing, Analysing and Generating

3. The gas needed by all living organisms for respiration is
   (1) chlorine (2) oxygen (3) nitrogen (4) carbon dioxide
   Process Skills: Communicating and Generating

4. Suzy sets up the experiment the night before. What is most likely to be observed early the next morning?
   (1) The green leaves are white. (2) The green leaves are dark blue.
   (3) The limewater is chalky. (4) The limewater remains the same.
   Process Skills: Observing, Analysing and Generating

5. Gases that make up our air include
   (A) oxygen (B) rare gases (C) nitrogen (D) carbon dioxide
   (1) A and B (2) B and C (3) A, B and C (4) A, B, C and D
   Process Skills: Communicating and Generating

6. Which of the following shadows shown in the experiment above is wrong?
   (1) (2) (3) (4)
   Process Skills: Observing, Analysing and Generating

7. An object that gives out light on its own is called a
   (1) sun (2) star (3) satellite (4) light source
   Process Skills: Communicating and Generating

8. Which of the following above breathe through gills? Circle your answer.
   Process Skills: Observing, Analysing and Generating
   (1) black (2) opaque (3) translucent (4) transparent

9. Grease paper that is used for baking cakes is
   (1) our eyes can see in a straight line (2) light travels in a straight line
   (3) we are able to see a candle through a series of cardboards (4) light cannot pass through a cardboard
   Process Skills: Observing, Analysing and Generating

10. Which is the windpipe?
    (1) A (2) B (3) C (4) D

11. Water changes to water vapour
    (1) at 100 °C only (2) at above 30 °C
    (3) at any temperature (4) at only a fixed temperature
    Process Skills: Communicating and Generating

12. Which is the most suitable term to replace X in the graph above?

13. Animals
    Plants

14. Used blood from parts of the body are carried back to the __________ of the heart first.
    (1) right atrium (2) right ventricle (3) left atrium (4) left ventricle
    Process Skills: Communicating and Generating

15. We can tell the time of the day by looking at the __________ of a shadow.
    (A) colour (B) length (C) position (D) brightness
    (1) A and B only (2) B and C only (3) A, B and C only (4) B, C and D only
    Process Skills: Observing and Generating
Section B
Write your answer to the questions in the space provided.

1. The diagram shows a part of the water cycle. What two processes involving a change of state occurring in the part of the water cycle shown?
   a) ___________________
   b) ___________________
   Process Skills: Observing, Analysing and Generating

2. Name three ways by which heat can be transmitted.
   a) ___________________
   b) ___________________
   c) ___________________
   Process Skills: Communicating and Generating

3. Carbon dioxide
   Oxygen
   Nitrogen

   Air is supposed to be made up of three component gases. Which gas in the air supports burning?
   a) ___________________
   Which gas in the air is considered inactive?
   b) ___________________
   Process Skills: Observing, Analysing and Generating

4. What are the three factors that affect the rate of drying in wet clothes?
   a) ___________________
   b) ___________________
   c) ___________________
   Process Skills: Observing, Analysing and Generating

5. Two fish of the same species are put into separate bowls as shown. The shape of the bowls is the same but the amount of water in them is different. What happens if the same amount of food is given and at the same time the water is not changed at all?
   a) ___________________
   Process Skills: Observing, Analysing and Generating

6. Fill in the name of the process in the table.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Name of process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Water changes to ice</td>
<td></td>
</tr>
<tr>
<td>2. Snow changes to water</td>
<td></td>
</tr>
<tr>
<td>3. Heating water to 100 °C</td>
<td></td>
</tr>
</tbody>
</table>

   Process Skills: Communicating and Generating

7. The diagram above shows three groups of blood cells. Name them.
   X: ___________________
   Y: ___________________
   Z: ___________________
   Process Skills: Observing, Analysing and Generating

8. The small blood vessels are called capillaries. What are the other two types of blood vessels?
   a) ___________________
   b) ___________________
   Process Skills: Communicating and Generating

HOW WELL DO YOU KNOW YOUR SCIENCE
YEAR 4, ISSUE 66

ANSWERS

Section A

1) 4  2) 3  3) 2  4) 3  5) 4  6) 3  7) 4  8) 3  9) 3  10) 2

Section B

1. a) evaporation  b) condensation
2. a) conduction  b) convection  c) radiation
3. a) Oxygen  b) Nitrogen
4. a) Presence of wind  b) Temperature of the place  c) Exposed surface area of the clothes
5. a) The fish in bowl A will die first because there is less water, hence there is not enough oxygen for the fish to breathe even though it is fed with the same amount of food.
7. X: Red blood cells  Y: White blood cells  Z: Platelets
8. a) Artery  b) Vein