

Science and Agri-Science Made Simple

LEVEL 3 - ANSWER KEY

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SCIENCE AND AGRI-SCIENCE MADE SIMPLE

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QU	PAGE 2
1	Tiny eggs
2	Larvae/caterpillars
3	Pupa/chrysalis
4	When the caterpillar shed its skin several times
5	Its spins a case or a cocoon around its self
6	When all the changes in the butterfly has been completed and it emerges from the cocoon
7	When it is molting
8	Larvae/caterpillars
9	Pupa/chrysalis
10	Leaf, case, cocoon

QU	PAGE 4
1	4
2	Eggs join together
3	Larvae
4	Tube
5	Pupae
6	When metamorphosis is completed
7	a. Water b. wrigglers c. micro-organism d. eat, active e. pupa, adult mosquito

QU	PAGE 6
1	Rainy season
2	Transparent jelly
3	Tadpoles
4	Tiny insects
5	Gills
6	In the froglet stage
7	Tail
8	a. 4 stages b. water c. tail d. transparent jelly e. tadpoles f. adult frog

QU	PAGE 8
1	Manure
2	Eggs hatch into yellow larvae call maggot
3	It turns from yellow to reddish brown or black
4	10 to 20 days
5	Come out
6	a. Harmful b. spread diseases

7	a. Larvae b. female c. emerge d. fully grown maggots
8	Breed - hatch or rear / breathe - to take in air / protect - to guard / metamorphosis - changes that take place in the life cycle of a butterfly / emerge - come out / develop - to grow / insect - an animal that is divided into 3 parts / decaying - rot / transparent - to see through / organism - a living thing

QU	PAGE 9
1	Larva
2	Tadpole
3	Reproduce
4	Pupa
5	Change
6	Cycle

QU	PAGE 10
1	B
2	B
3	C
4	B
5	D
6	D - gills
7	C
8	b

QU	PAGE 11
9	a. Metamorphosis b. egg c. tadpoles and gills
10	-
11	When caterpillar sheds its skin
12	Wrigglers
13	Egg
14	water
15	Tiny insects
16	Gills
17	False
18	True
19	10 to 20 days
20	Is a series of changes that living things undergo from birth to death

QU	PAGE 12
1	1 st Monday of October
2	To reflect on the state of our cities and towns and basic human right to adequate shelter
3	Enough
4	Home

QU	PAGE 14
1	A place when an organism lives
2	It provides food, water, space, shelter and air
3	A living thing
4	Lakes, pond, rivers, springs
5	Dolphins, fishes, whales
6	Pond, river
7	Pond, river, swamps
8	Swamp, sea, swamp, pond, sea, pond/lake

QU	PAGE 15
1	They can survive
2	Camels have long eye lashes, long legs to keep their body away from the sand

QU	PAGE 16
1	Blow hole
2	To help to catch its prey easily
3	To protect themselves from predators

QU	PAGE 17
1	Monkeys have long tails which help them in balancing their weight
2	The skin color of the penguin absorbs maximum heat from the sunlight therefore keeping them warm in cold climate. They have webbed feet to help them swim.
3	They have long neck to help them reach the top of tall trees

QU	PAGE 18
1	Spines protect the cactus from being eaten by animals
2	Stem - useful in storing water
3	Flower - blooms at night to avoid the heat of the day

QU	PAGE 19
1	Plants have flexible stems and leaves. This helps the plants to bend and flow with the water.
2	Some flowers have thorns, to prevent animals from eating their leaves
3	This lets them reach the sunlight, it helps tree to survive.

QU	PAGE 21
1	Camouflage is the use of color to blend into the surrounding.
2	Fishes have a streamline body to help them to cut through the water.
3	A predator is an animal that eats other animals.
4	To prevent birds and animals from eating them.
5	The leaves of the palm tree have long strips to face the strong wind. These trees have flexible stems. They have long roots that anchor the plants firmly in the ground
6	Adapt means - to change something to suit different conditions or uses.
7	Plants have air spaces in their stems to transport gases throughout the plant.
8	Some flowers are poisonous.to protect themselves from birds and animals. They have to protect themselves to survive.
9	Arboreal animals spend most of their time on trees.
10	A biome is the collective name of the plants and animals which live in a specific area.
11	Fish adapt to their environment by having a streamline body which helps them to cut through the water. They also have gills to help them breathe under water. Many fishes have colourful patterns that help them blend in with their environment to avoid being seen by predators.
12	a -false, b - false, c - true, d - true

QU	PAGE 22
13.	a blend, b -amphibians, c - predators, d - weight, e - penguin, f - flexible, g - anchor, h -camouflage

Words	Meanings
flexible	easy to bend and straighten
absorbs	to take in
maximum	most
adaptation	to adjust to its surrounding in order to survive
erect	straight
arboreal	animals that live on trees
organism	living things like plants and animals
survival	being able to obtain food and avoid predators
transpiration	process whereby plants lose water
biome	Is the collective name of the plants and animals which live in a specific area
humidity	how much water vapour in the air
camouflage	the use of colour to blend into the surrounding

QU	PAGE 23
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Words	Meanings
habitat	home
adapt	adjust
predator	hunter
merge	come out
xeric	animals that live in dry area
desert	a very dry place with sand and nothing grows

QU	PAGE 25
1	The oceans are important to people as a source of food, jobs and leisure.
2	Provide food and income
3	The ocean is important because it regulates our climate by absorbing carbon dioxide and holds 97% of the Earth's water.
4	The ocean is important to our health as it is a promising source of new medicines to combat cancer, pain and other diseases.
5	The oceans provide habitats and nesting grounds for seabirds and turtles.
6	The oceans assist in commercial activities by people taking out pearls from oysters and using them to make jewellery, and shells and corals have been widely used as a source of building material.
7	Four sporting activities that people enjoy doing in the ocean are swimming, fishing, scuba diving, snorkeling, boating, and water skiing
8	a) - diet, b) - climate, c) - habitat and nesting ground, d) - scuba diving, snorkelling
9	Swimming, snorkelling

QU	PAGE 27
1	climate and weather, drought and flooding, temperature change
2	Salt is extracted from the sea by evaporation of the seawater.
3	Oil and natural gas can also be found trapped in the rocks hidden under the sea beds
4	The seas are also great storehouses for chemicals like sodium and chlorine.
5	As the climate warms, marine plants and animals move towards the poles. The amount of light reaching plants and algae, needed for photosynthesis, is also reduced
6	Temperature is responsible for the successful breeding of fishes.
7	Coral bleaching leads to death since some corals are very fragile and cannot withstand temperature changes.
8	Coral bleaching is the whitening of corals due to the loss of pigmentation.
9	Pigmentation is the substance in your skin that gives its colour

QU	PAGE 28
1	Tropical storms and heavy rainfall may cause physical damage to coral reefs and other coastal ecosystems.
2	Lose their native habitats are forced into new areas in search of shelter and food. Species are "endangered," meaning their total numbers are so low that there is a possibility they will go extinct. (Trees and plants are uprooted and animal habitats are destroyed such as nesting sites for birds.)
3	A drought is a dry season that usually lasts for a long time with very little or no rainfall.
4	Aquatic plants and animals might die.
5	Subside means - diminish, lessen, recede, decrease
6	drought

QU	PAGE 29
1	A population is the number of all the organisms of the same group or species, living in the same place.
2	Overpopulation is the increase in the number of an organism (animal) so much so, that the environment cannot support them all.
3	Overpopulation will result in competition for space, food, light and shelter.
4	The animal that does the eating is called the predator.
5	An animal that is eaten by another is called a prey.
6	Circle - the deer

QU	PAGE 30
1	When predators eat sick or weak animals, the strong fishes survive. This will lead to a healthier population of fishes.
2	When a predator hunts too frequently on its prey, then the prey population decreases
3	Members of the same species, only compete against one another when there is not enough food or resources available for all the members.
4	Predation is the process in which one species uses another species as a good source of food to survive.
5	Circle - small fish
6	d) more food becomes available

QU	PAGE 31
1	They will kill other species, and might have disease that might spread to other organisms in the ecosystem
2	Pollution is the process of making land, water, air or other parts of the environment dirty and unsafe or unsuitable to use.
3	Overharvesting (over fishing). This occurs when we take out more fish than the fish can naturally replace.
4	Substances that pollute the environment are called pollutants.

QU	PAGE 32
1	Overharvesting and introduction of non-native species. The use of chemicals or dangerous foreign substances such as sewage, pesticides and fertilizers from agricultural runoff, or metals like lead or mercury.
2	Pollution is the process of making land, water, air or other parts of the environment dirty and unsafe or unsuitable to use.
3	Substances that pollute the environment are called pollutants.
4	Water pollution occurs when chemicals or dangerous foreign substances are introduced to water, including chemicals, sewage, pesticides and fertilizers from agricultural runoff, or metals like lead or mercury.
5	Chemicals and oil spills from motor boats and garbage
6	Fishes can be trapped in plastic bags. Fishing lines and nets can strangle fishes. Poisons from waste material enter the bodies of fishes.
7	Make people more aware of the dangers of polluting.

QU	PAGE 33
1	October 16 th
2	Food is important because it makes us grow , glow and go
3	So people around the world come together on this day to declare their commitment to get rid of hunger.
4	Plant more food, give donation
5	Apples, pear, bananas, orange, strawberry

QU	PAGE 36
	Plant → rabbit→ wildcat
	Plant → goat → lion
	Plant → goat → jackal → lion
	Plant → mouse → snake
	Plant → rabbit → wildcat → lion
	Plant → mouse → snake → kite

QU	PAGE 37
1	Grass → deer → wolf
	Grass → field mouse → fox
	Grass → field mouse → wolf
	Grass → field mouse → owl
2	grass
3	Deer, field mouse, rabbit

QU	PAGE 38
1 a	Insect
b	All animals in an ecosystem depend on each other but the first animal that begins a food chain much gets its food from a plant. The first animal is the insect to get its food directly from the plant.
c	Draw arrow between crab and caiman
2	c
3	c

QU	PAGE 39
4	d
5	c
6	b
7	b
8	b
9	a
10	c
11	d
12	c

QU	PAGE 40
13	d
14	b
15	Grass → rabbit → lion
16	Circle - frog, fish
17	Bird, boy

QU	PAGE 41
18.	A home where plants and animals live.
19.	Sea, river pond, lake
20.	Sea, ocean
21.	Pond, river, lake, swamp
22.	The oceans are important to us because it provides us with food, jobs and leisure.
23.	Climate and weather, Drought and flooding
24.	Overharvesting and pollution
25.	Food and shelter
26.	Coral bleaching is the whitening of corals due to the loss of pigmentation.
27.	Temperature Change is the most common cause for coral bleaching.
28.	Don't over fish, try not to use too much chemicals, don't pollute
29.	Over harvesting will result in a decrease of fish in the sea and eventually there will be a lack of fishes.

QU	PAGE 42
30.	Land and sea pollution
31.	Littering the sea and land
32.	It can destroy marine life which will lead to humans getting sick when they eat sea food that are polluted
33.	Air and noise
34.	Use less chemicals on plants, don't pollute the environment

QU	PAGE 43
1.	To put into groups
2.	They differ in shape, size and colour
3.	Flowering plants and Non-flowering plants.
4.	Coconut, rose, hibiscus, orchid

QU	PAGE 45
1.	It protects the flower buds
2.	Brightly coloured to attract insects for pollination
3.	The stamen
4.	The stamen consists of an anther and filament.
5.	The anther produces pollen
6.	The pistil
7.	A carpel is made up of a stigma, style and ovary

QU	PAGE 46
8.	The style connects the stigma to the ovary. It helps in fertilization
9.	The ovary (flower))
10.	Pollination is the transfer of pollen from the anther to stigma.

QU	PAGE 48
1.	The freezing point of water is 0°C.
2.	The instrument used for measuring temperature is a thermometer

QU	PAGE 49
3.	Temperature tells us how hot or cold something is.
4.	Temperature is usually measured in degrees Celsius and is written as °C.
5.	The clinical thermometer, ear thermometer, wall thermometer, laboratory thermometer
6.	The silver liquid in the thermometer is called mercury
7.	The boiling point of water is 100°C.
8.	When the temperature gets lower or colder, the liquid will fall.
9.	Normal body temperature is 37°C.
10.	The person has a fever
	Temperature shown -30° C, 64° C, 90° C

QU	PAGE 50
1.	The substance that dissolves in the liquid is known as the solute.
2.	The liquid that dissolves the solute is the solvent.
3.	When a solute is dissolved in a solvent a solution is formed.

QU	PAGE 51
4.	A mixture is made up of two or more substances mixed together.
	Method used - sieve, hand picking, magnet, evaporation

QU	PAGE 53
1.	solute
2.	solvent
3.	solution
4.	faster
5.	rates
6.	filtrate
7.	Residue
8.	A mixture is made up of two or more substances mixed together.
9.	Filtration, evaporation, using a magnet, hand picking, sieving

10.	The liquid that dissolves the solute is the solvent.
11.	The substance that dissolves in the liquid is known as the solute.
12.	When a solute is dissolved in a solvent a solution is formed.
13.	Filtration is used in water treatment plants, where water from the river is filtered to remove solid particles.
1.	It gives quick results, it is easy to do
14.	sugar
15.	Paper clip, pin

QU	PAGE 54
1.	Cook , wash, bathe
2.	To make sure that clean water remains available to us for future use
3.	conserve
4.	Check faucets and pipes for leaks, Turn off the water while brushing your teeth, Take shorter showers

QU	PAGE 55
1.	stamen
2.	pistil
3.	The stamen consists of an anther and filament
4.	Stamen consists of an anther and filament.
5.	A pistil is made up of a stigma, style and ovary
6.	Pollination is the transfer of pollen from the anther to stigma.
7.	ovary/flower
8.	Brightly, coloured petals
9.	sepals
10.	Anther
11.	B
12.	A
13.	C
14.	D
15.	B
16.	C

QU	PAGE 56
17.	C
18.	C
19.	B
20.	D
21.	B
22.	D
23.	C
24.	C

QU	PAGE 57
25.	a
26.	b
27.	A thermometer is the instrument used for measuring temperature
28.	Clinical, wall, ear, laboratory
29.	mercury
30.	alcohol
31.	Celsius, Fahrenheit
32.	Clinical
33.	Rise, fall
34.	100 ^o C
35.	0 ^o C
36.	37 ^o C
37.	sieve, hand picking, magnet, evaporation
38.	insoluble
39.	residue
40.	Filtrate
41.	Solution
42.	Solute
43.	It gives quick results, it is easy to do, very small amount of the mixture is required

QU	PAGE 58
1.	World Health Day
2.	7 th April
3.	You won't get or suffer from sickness and diseases
4.	Is held to capture worldwide attention to the major importance of having good health.
5.	Eat healthy and exercise

QU	PAGE 60
1.	Pollution is the process of making land, water, air or other parts of the environment dirty and unsafe or unsuitable to use.
2.	Land, air, water, noise
3.	Poisonous gases also known as greenhouse gases are produced from burning substances like: coal, oil and petrol.
4.	The rise of the earth's temperature causes Global Warming.
5.	Chemicals and oil spills from motor boats and garbage
6.	Land can become polluted by household garbage and litter
7.	vehicles, machinery and loud music.

QU	PAGE 62
1.	Global Warming occurs when the Greenhouse Effect is exacerbated (made worse) by human activities.
2.	Global warming alters the weather conditions
3.	Tsunamis, earthquakes, the melting of glaciers
4.	The atmosphere is wrapped a blanket of air which is made up of several gases.
5.	The heat of the sun.
6.	The heat from Earth travels back into the atmosphere.
7.	The gases in the atmosphere stop some of the heat from escaping into space.
8.	-
9.	The trapped rays keep the Earth at a warm temperature.
10.	Human activities are increasing the amount of greenhouse gases in the atmosphere than would naturally be there.
11.	Stop destroying forests to build houses. Stop the burning of petroleum, petroleum products and coal
12.	the greenhouse gases mainly made up of water vapour, carbon dioxide, methane, nitrous oxide

QU	PAGE 63
1.	Solar energy
2.	To keep us warm, dry laundry, It also provides energy for all living things directly or indirectly.

QU	PAGE 64
3.	Greenhouse gases, global warming
4.	Directly, Low, pollution
5.	renewable
6.	Home, business
7.	Electricity, heating

QU	PAGE 65
1.	Fossil fuels are deposits of organic materials, formed from decayed plants and animals.
2.	crude oil, coal, natural gas,
3.	By exposure to heat and pressure under the crust of the earth over hundreds of millions of years.
4.	Fossil fuels are used to fuel cars and airplanes, power electricity plants, and heat our homes.
5.	Sunglasses, tyres, tennis balls and televisions
6.	D

QU	PAGE 66
1.	World Environment Day
2.	5 th June
3.	To make people take positive environmental actions to protect nature and the planet Earth.
4.	do not litter, do not destroy the forest, plant trees
5.	b

QU	PAGE 67
1.	c
2.	c
3.	c
4.	b
5.	b
6.	c
7.	a
8.	Pollution is the process of making land, water, air or other parts of the environment dirty and unsafe or unsuitable to use.
9.	Air, land, water, noise

QU	PAGE 68
10.	cholera and typhoid
11.	Pollution causes global warming which alters our weather conditions which affect all of us.
12.	Earthquakes, Tsunamis, The melting of glaciers
13.	The gases in the atmosphere stop some of the heat from escaping into space. The trapped rays keep the Earth at a warm temperature. This is called the Greenhouse effect
14.	Water vapour, methane, carbon dioxide
15.	Keep us warm, dry clothes, It also provides energy for all living things directly or indirectly.
16.	oil, coal and gas
17.	Solar power is the cleanest, most reliable form of renewable energy available, This form of energy produces very low or no pollution, it is free
18.	Petroleum - formed from decaying of tiny organism/ coal it is black
19.	b
20.	true

QU	PAGE 70
1.	deserts, swamps, forests and grasslands
2.	They eat grass, leaves, barks and twigs
3.	Rabbits have exceptional senses.
4.	For Security, preventing rabbits from running away.
5.	Lighting, right temperature, ventilation

QU	PAGE 72
1.	Fill grass rack with wilted grass. Put pellets into automatic feeder. Fill automatic waterer with clean fresh water
2.	A rabbit's diet should include; dried water grass, root crops such as carrots, vegetables and rabbit pellets
3.	Rabbits should not eat: lettuce, tomatoes, cabbage, corn, bean, peas, potatoes, seeds, grains
4.	A rabbit should be held by its scruff and another hand under its hind legs
5.	a -true/ b - false/ c - false/ d - false/ e - true/ f - false

QU	PAGE 73
1.	Because rabbits have complex digestive systems
2.	When feeding roughage to rabbits, it is important to ensure that they have enough water to drink.
3.	When turnips or carrots are thinning, they can be fed to rabbits.
4.	Young tender vegetation is more nutritious than old fibrous material.

QU	PAGE 75
1.	If they are not taken care off
2.	Oil the metal equipment to prevent rust. Store the equipment in a dry, secure room until it is needed again
3.	Fill waterer with clean, fresh water daily. Provide fresh supply of feed daily. Trim the nails on the paws of rabbits.

QU	PAGE 77
1.	Talk softly as you approach an animal so it hears you coming
2.	Dogs growl, crouch, and bare their teeth when they feel threatened.

QU	PAGE 78
3.	Zoonotic diseases are those that can be transmitted directly from animals to humans
4.	Sharp edges, slippery floors, improper lighting, and other structural hazards are responsible for many accidents and injuries.
5.	Wear safety glasses, latex gloves, masks, steel toed footwear, helmets, coveralls, and lead aprons.
6.	Someone should handle hazardous medical equipment with extreme caution.
7.	To kill
8.	Dressed weight is the weight of an animal after being partially butchered, removing all the internal organs, the head as well as, inedible portions of the tail and legs.
9.	Vacuum packaging preserve large cuts of meat and eliminates oxygen within the package which helps to preserve the meat within the packaging
10.	To prevent the further growth of micro-organisms, which are already present in meat and meat products.
11.	Micro-organisms are living organisms (such as bacteria, fungi, viruses) too small to be seen with naked eye but visible under a microscope.
12.	Heating/sterilization, reduce or completely eliminate contaminating microorganisms

QU	PAGE 79
1.	Technology can be defined as the use of any information, processes, techniques or devices that can make our work easier.
2.	Use less labour and can cut costs, and a small number of people can grow vast quantities of food in the shortest period of time.
3.	Modern transportation helps in making products available to markets on time from the farm
4.	Cooling facilities are used by farmers to deliver tomatoes and other perishable crops to keep them fresh as they transport them to the market.

QU	PAGE 81
1.	Controlled environment agriculture is any agriculture technology which involves controlling the environment in which the plant is grown.
2.	Greenhouses are made with Polyethylene and Polycarbonate Material or Acrylic Glass.
3.	No. Plastic reduces the sunlight and prevents the direct rainfall on plants.
4.	cucumbers, peppers, chillies, poinsettias and tomatoes

QU	PAGE 82
1.	Hydroponics is a method of growing plants without soil.
2.	Hydroponics uses 20 times less water than soil based gardening. The environment is sterile, which means no pesticides. The system water can be reused, allowing you to conserve water. Crops grow two times faster in hydroponic gardening

QU	PAGE 83
1.	The wicking system is known as passive hydroponics, meaning that you don't need any air pumps or water pumps to use it.
2.	Nutrients and water are moved into a plant's root zone through a wick.
3.	Wick systems are good for smaller plants that don't use up a lot of water or nutrients like lettuces or herbs.

QU	PAGE 84
1.	Vital nutrients are added to a tank of water to create a nutrient reservoir which is kept separate from the plants.
2.	The pump is controlled by a timer.
3.	One benefit of using a timer on the drip system is so you don't have to water the plants manually and it allows you to decide how frequently you want a watering cycle to occur.

QU	PAGE 88
1.	Carry them from storage into the garden in a wheelbarrow.
2.	They won't be able to see it and they can get hurt.
3.	Wear safety goggles, sturdy shoes, proper gloves
4.	To prevent injury when using power tools and equipment. To prevent getting blisters and sun burnt from the sun
5.	Wear goggles when applying any chemicals to the garden to avoid burns or injury.
6.	Wear proper gloves to reduce blistering and protect your skin from fertilizers, pesticides, bacteria and fungus that live in the soil.
7.	If you carry them on your shoulder, it is easy to hit someone accidentally if you turn around and they are close by.
8.	Use a hand shovel or rake rather than your hand for digging because sharp objects and debris buried in the soil may cut you.
9.	To prevent injury
10.	Goggles to prevent chemicals from going into your eyes. Wear gloves to reduce blistering and protect your skin from fertilizers and pesticides.