

# Workbook 6 Answer Key

## Unit 1

- 1 2 e 3 c 4 b 5 a
- 2 2 invention 3 design process 4 prototype
- 3 Students' own answers
- 4 2 technology 3 research 4 design/function  
5 function/design 6 solution 7 invention
- 5 2 The first computers were very big and slow and they could not do many things. the first computers  
3 Design engineers did a lot of research to find new technologies to make them better. computers  
4 People had to use their computers at home or at work because they needed electricity. the computers

## Lesson 1

- 1 2 a 3 c 4 b
- 2 2 e 3 a 4 d 5 b
- 3 Students' own answers
- 4 a the police detective
- 5 2 nanotechnology 3 atoms 4 sensor 5 mimic  
6 prosthetic limbs
- 6 2 F 3 T 4 T 5 F
- 7 Students' own answers
- 8 The scientist wants to make nanobots that will help sick people.  
He makes nanobots that are only a few atoms big.  
These nanobots have a sensor system that helps them group together and change function.  
The scientist makes him two prosthetic limbs that help him run at 100km an hour!
- 9 2 b 3 e 4 a 5 c
- 10 2 Designers use materials that are very light.  
3 There are a lot of types of prosthetic limbs that are designed to do different things.  
4 Modern technology has created prosthetic limbs that people can move with their brains.  
5 Some prosthetic legs have mechanisms that help people walk and run.

## Lesson 2

- 1 2 a 3 f 4 d 5 g 6 b 7 e
- 2 2 e 3 h 4 d 5 a 6 g 7 b 8 f  
Missing word: design
- 3 2 document 3 graphic 4 measurements  
5 ensure
- 4 2 How 3 What 4 How 5 Why
- 5 2 Who 3 Why 4 What 5 How
- 6 2 What do design engineers use to develop robotic arms?  
3 Why do design engineers sometime stop the development of a prototype?  
4 What do design engineers learn from testing the prototype?  
5 How do design engineers communicate results?
- 7 Suggested answers:  
Where did you find out about the robots?  
Why was the article scary?  
How do the robots work?  
What do the robots look like?  
Who makes them?  
When is the robotics show?

## Unit 2

- 1 2 c 3 e 4 a 5 d
- 2 2 function 3 adapt 4 extinction 5 survival
- 3 Suggested answers:  
1 It is very cold and there is a lot of snow.  
2 Adaptations that protect animals from the cold e.g. thick fur.
- 4 2 hide from its prey  
3 stored in the fat  
4 catch and eat its prey  
5 stop water from going inside its nose  
6 help it walk on the snow

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5 Suggested answer:

The first thing that a camel needs is thick eyebrows. This adaptation helps shade the animal's eye from the sunlight. Because it lives in the desert, a camel also has long eyelashes to keep the sand out of the animal's eyes. The opening of a camel's nose has adapted. It can close, and it has lots of hairs in it that keep the sand out of the camel's nose. The camel has a hump, where it stores food for energy. Because the sand is very hot, the camel has developed very long legs to keep its body away from the hot sand. Finally, a camel loses very little water from its body, which helps the animal survive with drinking water for a week.

## Lesson 1

- 1 2 T  
3 F All the animals in one species develop the same adaptations.  
4 T  
5 T  
6 F Hibernation is a state of inactivity when animals try to conserve energy because there is a shortage of food (usually in the winter).  
7 T
- 2 2 Adaptations 3 structural 4 Seasonal changes  
5 hibernate 6 instinct
- 3 2 Adaptation 3 migrate 4 physical characteristics  
5 behavioral adaptation 6 Hibernation  
7 Seasonal changes
- 4 1 b 2 b 3 a
- 5 2 c 3 f 4 a 5 b 6 d
- 6 2 A lion can't see one animal when there are lots of stripes together.  
3 When zebras cross a river, they have to look out for alligators.  
4 If zebras move fast enough, the alligators don't catch them.  
5 If a predator tries to go near zebras, they hear it from a distance and run away.

## Lesson 2

- 1 2 fossil 3 sauropod 4 oil 5 coal  
6 paleontologist
- 2 2 sauropods, hadrosaurs 3 palaeontologists  
4 hadrosaurs 5 sauropods 6 fossils 7 coal, oil
- 3 Students' own answers
- 4 1 c 2 b
- 5 2 palaeontologists 3 fossils 4 Fossils 5 remains  
6 remains 7 Paleontologists 8 sauropods  
9 Fossils 10 palaeontologists 11 fossil fuels  
12 organisms
- 6 2 are related 3 compare 4 are found 5 change  
6 are covered
- 7 2 New discoveries are made every day.  
3 Hadrosaurs are compared to some modern birds.  
4 Electricity is produced from coal.  
5 Oil is turned into energy.  
6 Less electricity is consumed to conserve fossil fuels.  
7 Fossils of giant sea turtles were discovered in South Dakota.

## Unit 3

- 1 1 nervous 2 circulatory 3 respiratory
- 2 a 1 b 3 c 2
- 3 b 3 As I blow, I exhale and push air out of my lungs.  
c 2 My heart is working hard to pump oxygen around my body after exercising.
- 4 Students' own answers
- 5 1 respiratory 2 circulatory  
Main points of advice:  
If you are already sick, stay at home for a few days.  
When you're with other people, try to avoid spreading the virus.  
Cover your nose and mouth with a tissue when you sneeze.  
Joining an afterschool sports club is a good idea.  
Stay away from places where people smoke.

# Workbook 6 Answer Key

6 2 T 3 F

- 7 2 Eat the right foods, such as foods rich in minerals, like vitamins B1 and B12, as well as healthy fats like those in nuts and fish.  
3 Drink lots of water as this helps the functions of your brain. Without water you will feel very tired. You need to drink 6–8 cups a day.  
4 Sleep well, as this helps the function of your memory. You need about 10–11 hours' sleep a day.

## Lesson 1

- 1 2 vein 3 capillary 4 organ 5 circulatory system  
6 heart 7 cells 8 tissue
- 2 1 organ 2 cell 3 tissue
- 3 3 The circulatory system includes the heart, blood, lungs, and blood vessels.  
4 The blood takes in oxygen and gets rid of carbon dioxide in the heart lungs.  
5 The heart is ~~a system~~ an organ.  
6 ✓
- 4 2 system 3 cells 4 organs 5 ventricle  
6 artery 7 veins 8 atrium
- 5 It carries nutrients to cells; it helps the body keep a steady temperature; it protects the body from disease; it cleans and oxygenates the blood.
- 6 2 A vein is bigger than a capillary.  
3 A vein has thinner walls than an artery.  
4 A cell is the smallest.  
5 The aorta is the biggest.

## Lesson 2

- 1 2 lung 3 bronchioles 4 air sac 5 inhale  
6 diaphragm 7 exhale
- 2 2 exhale 3 respiratory 4 trachea 5 lungs  
6 bronchioles 7 air sacs 8 exhale
- 3 2 diaphragm 3 lungs 4 exhale 5 lungs  
6 diaphragm 7 diaphragm
- 4 Students' own answers

## Lesson 3

- 1 2 sense organs 3 nerves 4 neuron  
5 spinal cord 6 brain
- 2 2 cord 3 balance 4 neurons 5 buds 6 nerves
- 3 2 Information about the environment is collected by the nervous system. / Information is collected by the nervous system about the environment.  
3 Information from other neurons is received by the dendrites. / Information is received by the dendrites from other neurons.  
4 The largest part of your brain is taken up by the cerebrum.
- 4 Suggested answers:  
2 send signals to the brain about the sounds in your environment  
3 your balance  
4 they sense light and send signals to the brain about the picture on the screen  
5 they sense light and send signals to the brain about what the sandwich looks like  
6 they sense light and send signals to the brain about your environment

## Review 1–3

- 1 2 a 3 b 4 c 5 a 6 c 7 b 8 b 9 c 10 a
- 2 Across: 5 organs 7 problems 8 mimic  
10 capillary  
Down: 1 seasonal 3 tissue 4 extinct 6 atrium  
9 coal

## Unit 4

- 1 2 thermometer 3 moisture 4 air pressure  
5 wind speed 6 snow
- 2 2 thermometer 3 Snow 4 Moisture  
5 Wind speed 6 Precipitation
- 3 Students' own answers
- 4 Students' own answers
- 5 A 3 B 2 C 4
- 6 36 degrees Celsius

# Workbook 6 Answer Key

## Lesson 1

- 1 season 2 plan agricultural activities
- 2 d 3 a 4 c
- 1 jet stream 2 trade
- Students' own answers
- 2 barometric pressure 3 weather 4 circulation  
5 humidity 6 atmosphere
- 2 ~~there's going to be rain and snow~~ the weather is going to be good/warm/hot  
3 ~~levels of humidity~~ air pressure and temperatures  
4 ~~the weather hotter or colder~~ people feel hotter or colder  
5 ~~hotter~~ cooler / less hot
- 1 Jet streams 2 Trade winds 3 equator
- 2 gone 3 seen 4 made 5 been 6 fallen  
7 become 8 blown
- 2 Have you ever been in a storm?  
3 Have you ever used a barometer?  
4 Have you ever made a weather prediction?  
5 Have you ever travelled to the equator?
- Students' own answers

## Lesson 2

- 2 sleet 3 hail 4 water droplets 5 ice crystals  
6 snowflake
- 2 Ice crystals 3 Water droplets 4 snowflakes  
5 sleet 6 hail
- 2 e 3 b 4 d 5 a
- 2 altocumulus 3 stratus 4 fog 5 cumulonimbus
- 1 Cumulonimbus 2 Fog 3 Stratus
- 2 see, will rain 3 falls, will not be / won't be  
4 snows, will not go / won't go 5 us, will see
- 2 fall, they will melt 3 is, the grass will turn yellow  
4 comes, the fog will disappear
- Students' own answers

## Unit 5

- 2 nonrenewable 3 inexhaustible 4 surface
- 2 d 3 a 4 b
- 2 nonrenewable 3 Renewable 4 natural
- Students' own answers
- 2 electrical nuclear  
3 ~~by burning fossil fuels only~~ from different sources such as fossil fuels, wind, and the sun.  
4 ~~air pressure~~ masses of air
- Students' own answers

## Lesson 1

- 2 plates 3 converging plate boundary  
4 spreading plate boundary  
5 sliding plate boundary 6 fault
- 2 converging plate boundary  
3 sliding plate boundary 4 fault  
5 plates 6 lithosphere
- 1 constructive 2 destructive
- Globe 2 shows Earth as it is now.  
Globe 1 shows Earth over 200 million years ago when there was just one continent, Pangaea.
- 2 lithosphere 3 converging 4 spreading  
5 sliding 6 faults 7 plates.

## Lesson 2

- 2 geothermal 3 solar 4 nuclear
- 1 inexhaustible 2 renewable 3 nonrenewable
- 2 a 3 c 4 b 5 b
- 2 e, h 3 b, j 4 a 5 c 6 g, i
- 1 c 2 a 3 b 4 d

# Workbook 6 Answer Key

## Lesson 3

- 1 2 automobile 3 litter 4 sandstorm 5 forest fire  
6 chemicals  
They all show examples of pollution.
- 2 1 automobiles, litter, chemicals 2 forest fires
- 3 2 e 3 c 4 a 5 b 6 a 7 c 8 d
- 4 2 chemicals 3 landfills 4 coal-burning power plants 5 automobiles 6 litter
- 5 2 The chemicals I'm using may/might harm other organisms.  
3 Some pollutants may/might harm the planet.  
4 Without enough sunlight the plants may/might die.
- 6 Students' own answers

## Unit 6

- 1 2 glowing 3 orbit 4 moon 5 meteors  
6 comet 7 asteroid
- 2 b gas c glowing d moon e asteroid  
f meteor g orbit
- 3 Suggested answer:  
Objects in space travel in a straight line until gravity makes them change direction. The gravity of a planet pulls objects towards it. The objects then travel in orbit around the planet.
- 4 1 b 2 a
- 5 1 travel in a straight line 2 dying 3 burn
- 6 Students' own answers

## Lesson 1

- 1 2 photosphere 3 chromosphere 4 sunspots  
5 prominence 6 solar flares 7 constellation  
8 Polaris
- 2 2 chromosphere 3 corona 4 prominences  
5 flares 6 sunspots

- 3 2 e 3 b 4 d 5 a 6 f
- 4 2 b 3 c 4 c 5 a
- 5 Students' own answers
- 8 2 as hot as 3 as many moons as 4 as long as  
5 as small as
- 9 2 as heavy as it is on Earth  
3 not as thick as on Kepler -452b  
4 as bright as our sunlight  
5 as much energy from its sun as Earth  
6 as long as an Earth year

## Lesson 2

- 1 2 dwarf planet 3 asteroid 4 comet
- 2 2 b 3 b 4 a 5 b
- 3 2 C 3 C 4 M 5 C
- 4 a 5 b 3 c 2 d 1 e 6 f 4
- 5 2 asteroid 3 meteoroid 4 meteor 5 meteorite
- 6 2 moons 3 objects 4 asteroid 5 dwarf planet  
6 solar system
- 7 2 so fast that 3 so large that 4 so hot that  
5 so many meteors that 6 so forceful that
- 8 2 Pluto's gravity is so weak that it cannot clear the region around its orbit.  
3 Pluto's orbit is so odd that sometimes it is closer to the sun than Neptune.  
4 Mercury is so close to the sun that the sun pulls everything away from Mercury's orbit.  
5 The sun is so hot that anything that goes near it burns.

# Workbook 6 Answer Key

## Review 4-6

- 1 2 c 3 a 4 c 5 b 6 b 7 a 8 b 9 c 10 a  
 2 2 jet stream 3 trade winds 4 lithosphere  
 5 pollutant 6 sliding 7 crater 8 sun  
 9 dwarf planet

H	T	O	S	L	I	D	I	N	G	K	C	Q	T	H	N
M	G	Y	O	Z	F	G	S	S	Z	Z	R	H	O	U	P
Z	T	H	D	J	E	G	C	T	K	K	A	C	S	W	Z
A	T	R	E	W	P	H	B	P	P	V	T	F	U	S	G
Y	F	T	A	G	A	O	F	N	P	U	E	L	A	L	J
Z	Q	D	W	D	J	R	L	U	C	Z	R	A	N	P	E
L	A	Y	C	Z	E	K	F	L	O	K	K	O	N	Y	T
D	L	V	O	E	X	W	J	P	U	H	I	W	J	P	S
Y	T	G	G	O	I	K	I	K	L	T	D	A	O	N	T
M	I	Z	B	J	H	O	C	N	A	A	A	N	G	R	R
Q	T	N	Y	E	C	G	E	L	D	C	N	N	U	W	E
W	U	K	M	G	O	E	L	F	D	S	D	E	T	Q	A
C	D	M	Y	W	J	E	I	X	B	B	D	X	T	O	M
Y	E	C	L	J	T	H	O	S	P	H	E	R	E	T	Z
G	C	O	F	S	J	Q	Q	C	P	M	Z	F	O	K	D

## Unit 7

- 1 2 evaporates, Water vapor 3 solution 4 mixture  
 5 chemical change 6 physical change  
 2 Students' own answers  
 3 2 properties 3 freezes 4 evaporates 5 physical  
 6 chemical 7 water vapor  
 4 2 T 3 T 4 F

## Lesson 1

- 1 2 plasma 3 evaporation 4 condensation  
 5 boiling point 6 melting/freezing point  
 2 2 volume 3 Plasma 4 evaporation 5 freezing  
 6 condensation  
 3 2 from liquid to solid 3 evaporation  
 4 from liquid to gas 5 condensation  
 5 2 metal 3 liquid 4 material 5 container  
 6 solid  
 6 Students' own answers

## Lesson 2

- 1 2 separated 3 solubility 4 solution 5 solute  
 6 solvent  
 2 2 cannot can 3 will won't 4 is not a, can't can  
 5 leaving stirring, cooling heating  
 6 the same different  
 3 Students' own answers  
 4 Suggested answers:  
 1 soup from the pot, solute, solution  
 2 the solubility of a material increases at a higher  
 temperature, so I will heat up the milk.  
 3 mixture, so I can sort the raisins from the nuts using  
 my hands.  
 5 Suggested answers:  
 2 You could separate them from the rest of the  
 mixture.  
 3 You could add some sugar to your glass.  
 4 You could dissolve some cocoa in hot milk.  
 5 You could add ice cubes.  
 6 You could heat the solution.

## Lesson 3

- 1 2 substance 3 chemical change  
 4 physical change 5 temperature  
 2 2 P 3 C 4 C 5 P 6 C  
 3 a  
 4 1 d 2 a 3 b  
 5 Students' own answers

## Unit 8

- 1 2 electric 3 push 4 pull 5 magnetic 6 gravity  
 2 2 gravity 3 electric 4 push 5 pull 6 motion  
 3 gravity  
 4 2 e 3 a 4 b 5 c  
 5 2 F 3 F 4 T 5 T

# Workbook 6 Answer Key

## Lesson 1

- 2 friction 3 air resistance 4 gravity 5 electric 6 electromagnets
- b air resistance c friction d gravity e balanced forces f electromagnets
- 1 Noncontact 2 Contact
- 1 In the beginning, the push is stronger than gravity, so the ball moves upward.  
2 At some point, push and gravity become equal forces, so the ball doesn't move.  
3 Now, gravity is stronger than the push, and the ball is pulled downward toward earth.
- 2 pushes 3 gravity 4 pulls 5 Friction 6 Air resistance 7 increase
- 2 a 3 d 4 c 5 e
- 1 (turned) off 2 slow down 3 speed up 4 depends on
- Students' own answers

## Lesson 2

- 2 inclined 3 lever 4 wedge 5 wheel 6 screw  
They are all simple machines.
- 2 complex machine 3 input force/effort 4 output force 5 load 6 fulcrum
- 2 T 3 F 4 F 5 T 6 T
- 2 I use a pair of scissors. A pair of scissors is a wedge.  
3 I use a doorknob. A doorknob is a wheel and axle.  
4 I use a bottle top. A bottle top is a screw.  
5 I use a ramp. A ramp is an inclined plane.
- Students' own answers
- 2 can be stopped 3 can be moved 4 can be pulled

- 2 A crane can be used to lift and carry heavy loads.  
3 A car can be lifted by using a car jack. / A car jack can be used to lift a car.  
4 A ramp can be fitted over steps to help wheelchair users.
- Students' own answers

## Unit 9

- 1 b 2 a
- 2 light energy 3 transformed 4 transferred
- Suggested answers:  
2 The kinetic energy of the stick is transformed into sound energy.  
3 The kinetic energy of the water is transformed into mechanical energy and then into electrical energy.
- 1 b 2 d 3 c 4 a

## Lesson 1

- 2 mechanical 3 gravitational 4 kinetic 5 destroyed
- 2 Potential energy 3 Gravitational potential energy 4 Elastic potential energy 5 Kinetic energy
- 3 ~~stops~~ a pole-vaulter ~~from jumping~~, helps a pole-vaulter jump  
4 ✓  
5 ~~less~~ more
- 1 elastic potential, kinetic  
2 mechanical, kinetic, gravitational potential  
3 destroyed, transferred
- 2 easily 3 brightly 4 slowly
- Students' own answers



# Workbook 6 Answer Key

## Lesson 2

- 1 2 a 3 c 4 c 5 b 6 c
- 2 1 c 2 b 3 d 4 a
- 3 2 sound waves 3 sound 4 volume 5 frequency  
6 high-pitched 7 low-pitched
- 5 2 The smaller the object, the higher the pitch  
3 The closer you are, the louder the sound
- 6 Suggested answers:
  - 1 When I am at a very noisy place. / When the person that I want to talk to is far from me. I increase the volume of my voice by pushing air out of my lungs with more force.
  - 2 I can hear an echo. This happens because there's nothing to absorb sound, so it bounces off the surface of the walls.
  - 3 It is high-pitched because I am a girl / still young. / It is low-pitched because I am a teenage boy.

## Lesson 3

- 1 2 translucent 3 transparent 4 dispersion  
5 refraction 6 reflection
- 2 2 dispersion 3 refraction 4 Opaque  
5 Translucent 6 reflection
- 3 2 but 3 and 4 but 5 or
- 4 2 Microwaves heat up the water in food and cook it.  
3 You can't see ultraviolet light or infrared light.  
4 Light can go through translucent materials, but it can't go through opaque materials.  
5 You can see your reflection on a smooth surface made of glass or metal.
- 5 Students' own answers

## Review 7-9

- 1 1 b 2 a 3 b 4 c 5 b 6 a 7 a 8 c 9 c  
10 b
- 2 2 FULCRUM 3 SOLVENT 4 OPAQUE  
5 VACUUM 6 WEDGE 7 SOUND 8 FORCE  
9 DESTROYED.  
Hidden word: FREQUENCY

- 3 The incorrect information is in sentences 2 and 4. The correct information is:
  - 2 A simple machine is made up of one or two parts. A complex machine is made up of two or more parts.
  - 4 A mirage is a result of the reflection of light. A rainbow is a result of the dispersion of light.

## Reading Skills

### Unit 1

- 1 she 2 it 3 them

### Unit 2

- 1 In the spring.
- 2 Because the weather is warmer and there is more food available.

### Unit 3

- 1 Another major function of your nervous system is to control involuntary actions.
- 2 Your brain stem controls some involuntary actions.
- 3 Some messages that the body receives do not pass to the brain at all.

### Unit 4

What makes up Earth's atmosphere

### Unit 5

- 1 Coal 2 & 3 Students' own answers

### Unit 6

Clyde Tombaugh

### Unit 7

Suggested answers:

Salt water is a solution. If the water (the liquid solvent) evaporated, the sediment must be the solid remains of the solute.

### Unit 8

because, 2

### Unit 9

- 1 d 2 b 3 a 4 d



# Workbook 6 Answer Key

## Writing Skills

### Unit 1

Suggested answers:

- 1 Where did you read the article?
- 2 What is the new technology?
- 3 What new things can the deaf people do?

### Unit 2

- 1 is formed   2 are covered   3 are produced  
4 is forced   5 is used

### Unit 3

Students' own answers

### Unit 4

Students' own answers

### Unit 5

Students' own answers

### Unit 6

Students' own answers

### Unit 7

Suggested answers:

- 1 You could heat it up/stir it.
- 2 You could add some ice to it.

### Unit 8

- 1 wheel and axle   2 pulley   3 lever

### Unit 9

Suggested answers:

- 1 A windmill turns quickly when the wind is very strong.
- 2 The sun shines more brightly than any other object in the solar system.