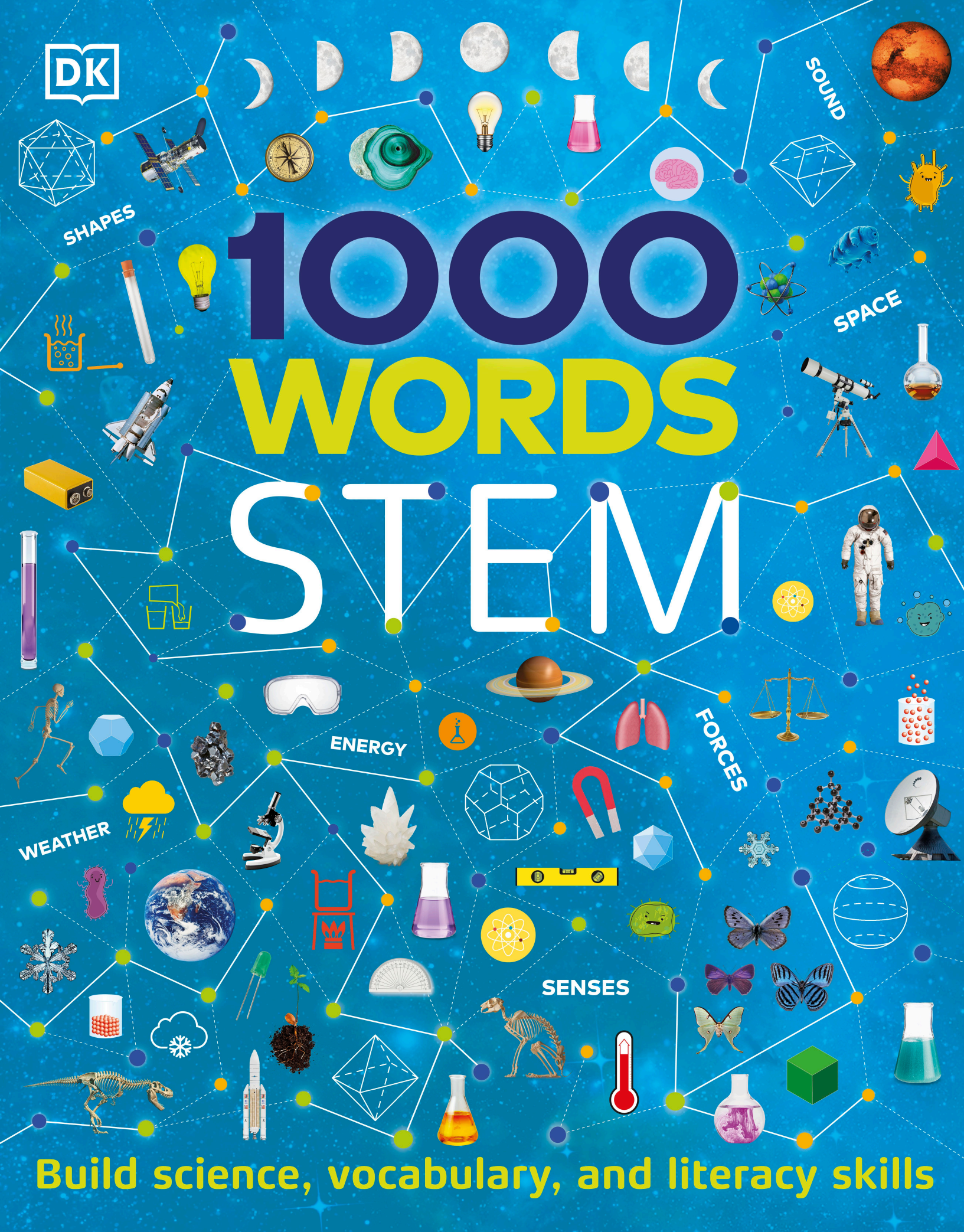

DK
SOUND
SHAPES
SPACE
1000
WORDS
STEM
ENERGY
FORCES
WEATHER
SENSES
Build science, vocabulary, and literacy skills



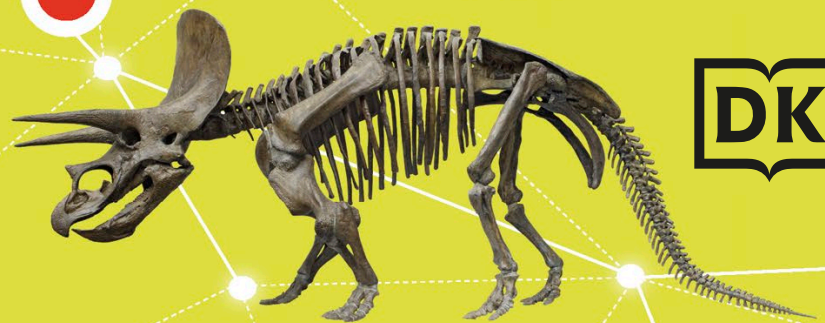
1000 WORDS STEM


Jules Pottle







DK

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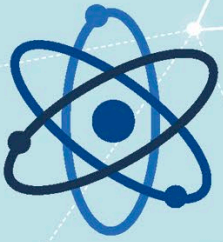
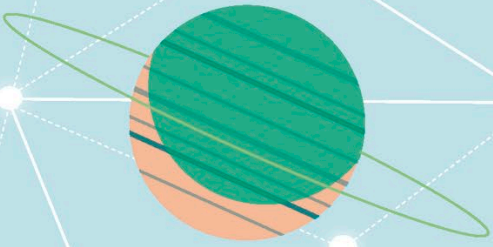
1000 WORDS STEM





A note for parents about STEM...

STEM subjects are those which incorporate science, technology, engineering, and maths. They often overlap. You need mathematical measurements to collect the results from a science experiment. You need to write computer programs to operate the machines you have engineered. You need to understand the science of forces to be a structural engineer. STEM subjects are highly interlinked and many of the words from one subject will be useful when learning about another.

Children will meet a lot of new words when they begin to study STEM subjects at school. A great deal of technical vocabulary is used in these lessons: names for pieces of equipment, names for things we cannot see (such as forces), and words that describe a specific property of materials (such as “opaque”). These may all be new to children.

This book contains topics and words that children are likely to encounter in their first few years at school. It also includes many of the topics that fascinate children in this age group, and some that show how STEM subjects are present in our everyday lives.

A broad vocabulary can help children to access their education more easily. Spending time with children and talking about the words and the illustrations in this book will expose them to more than just the words written here, as they will encounter additional words as part of the conversation. This book is a great place to start your child’s STEM education.

Jules Pottle, primary science consultant, teacher, and trainer

Contents

6	Hot and cold
8	Seasons
10	Sound
12	Machines
14	Space
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18	Transport
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60	Sharing and grouping
62	Adding and subtracting
64	Acknowledgements

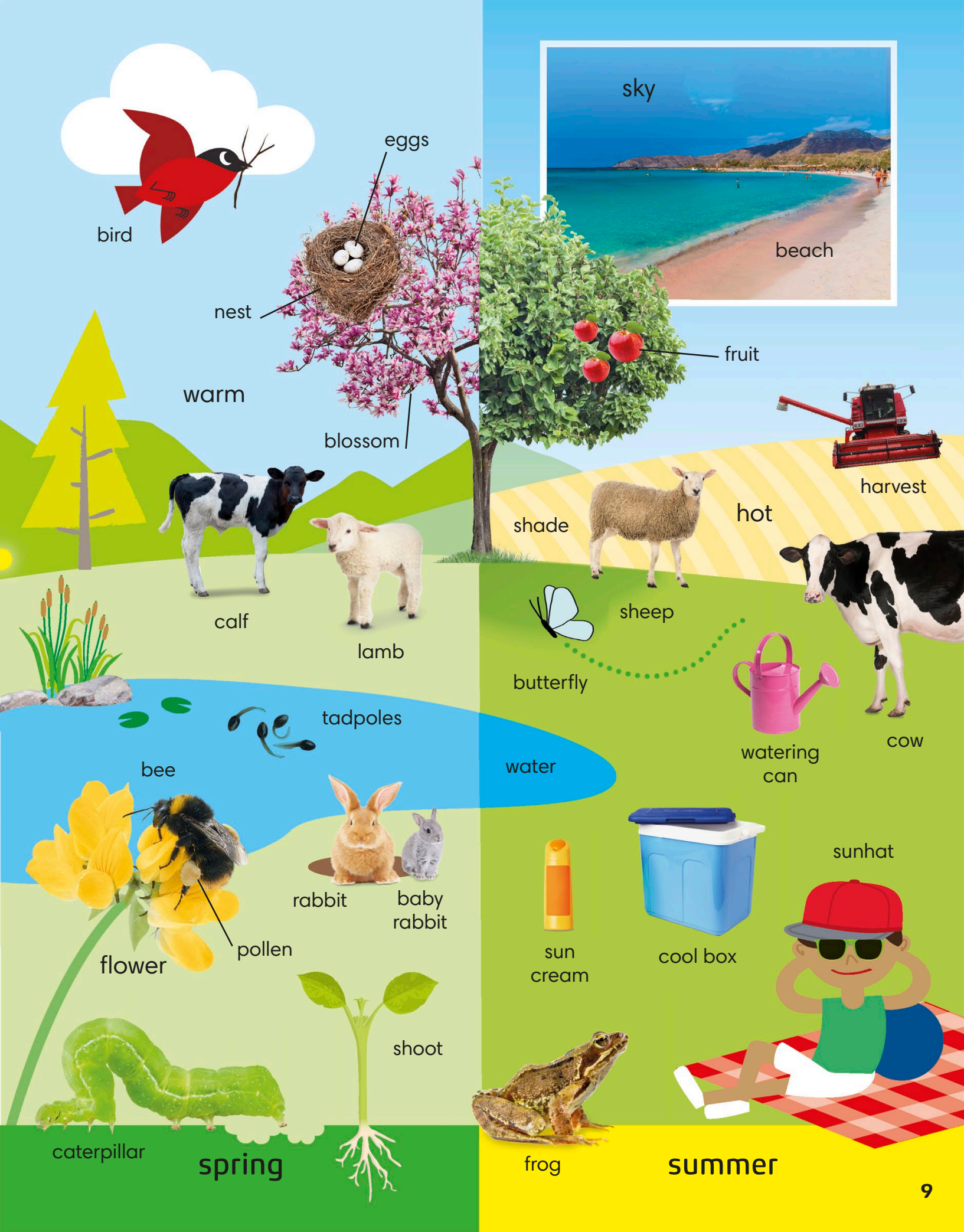
Hot and cold

How warm are you right now? Some places in the world are warm while others are freezing cold.


tree frog
vine
rainforest
snake
monkey
butterfly
North Pole
Arctic
Antarctic
South Pole
cold
glacier
iceberg
polar bear
explorers
orca
sea
snowman
seal
Inuk
penguins

Seasons

As the Earth orbits the Sun, countries near the North and South Poles move through different seasons. Winter is usually cold. In spring, the weather gets warmer. It is hottest in summer, and then cools down again in autumn.


bird
eggs
nest
blossom
warm
calf
lamb
tadpoles
bee
flower
pollen
rabbit
baby rabbit
caterpillar
shoot
spring
sky
beach
fruit
harvest
hot
shade
sheep
butterfly
watering can
cow
water
sun cream
cool box
sunhat
frog
summer

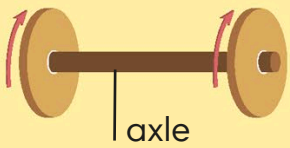
Sound

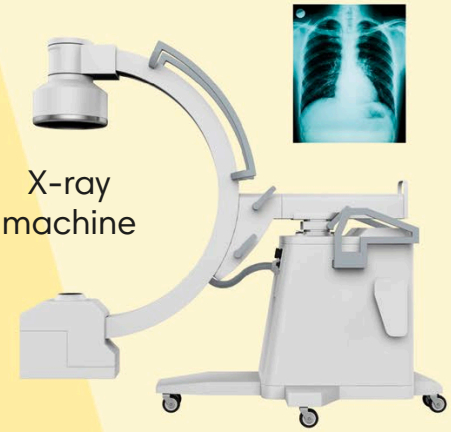
The world around us is bursting with different noises. Do you know what all of these sound like?


tune
voice
hum
microphone
sing
piano
vibration
speakers
splish
splash
headphones
flute
woof
meow
siren
roar
tweet
fire engine
buzz
mobile phone
volume
bird song
clickety clack
loud
tick
tock
aeroplane
purr
quiet

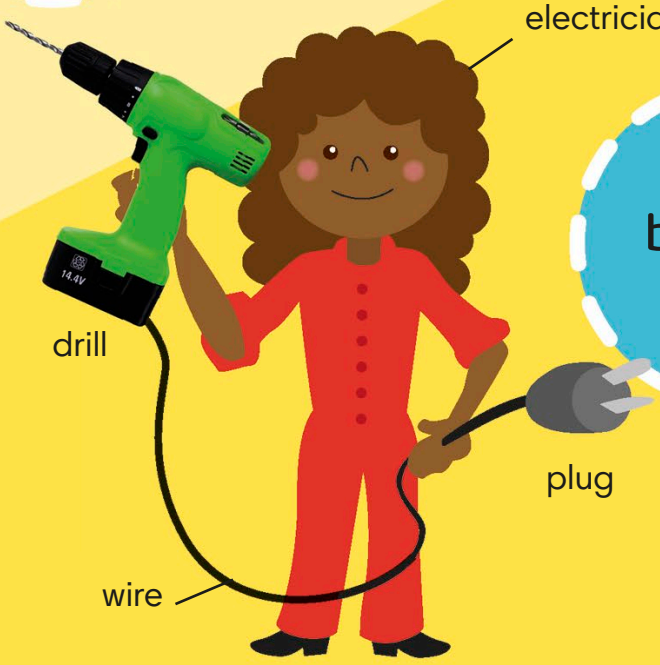
Machines

We build machines to help us. They can be small and simple or big and complicated.





parts



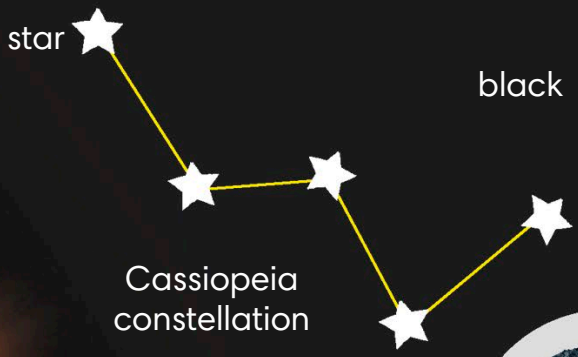
building


hospital
wheelchair
computer
television
toaster
scanner
calculator
clock
home
mobile phone
fridge
cog
pull
push
lawnmower
vacuum cleaner
racing car
power
tractor
tyre
transport
steam engine
bus
wheel
digger
bike
motorbike

Space

Have you ever looked at the night sky and wondered what's out there, in space?

shooting star



outer space

asteroid

light

Jupiter

Solar System

Sun

Mars

day

night

Earth

Venus

Mercury

solar panel

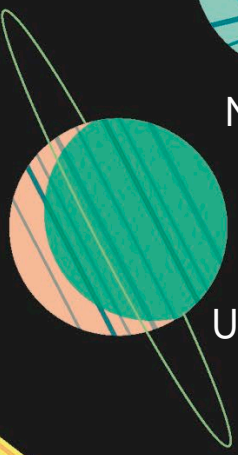
satellite

Mars Rover

Hubble Space Telescope

Neptune

eclipse

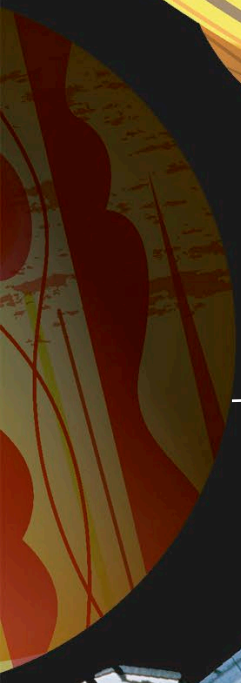


Uranus

Saturn

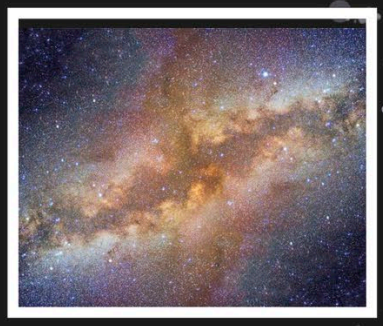
planets

Northern lights

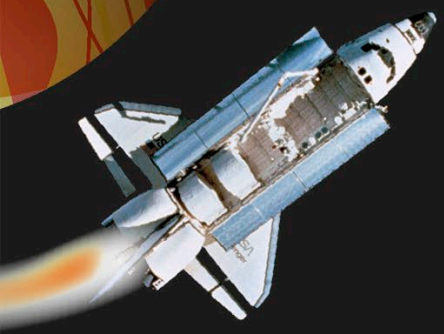


dark

comet



Milky Way



space shuttle

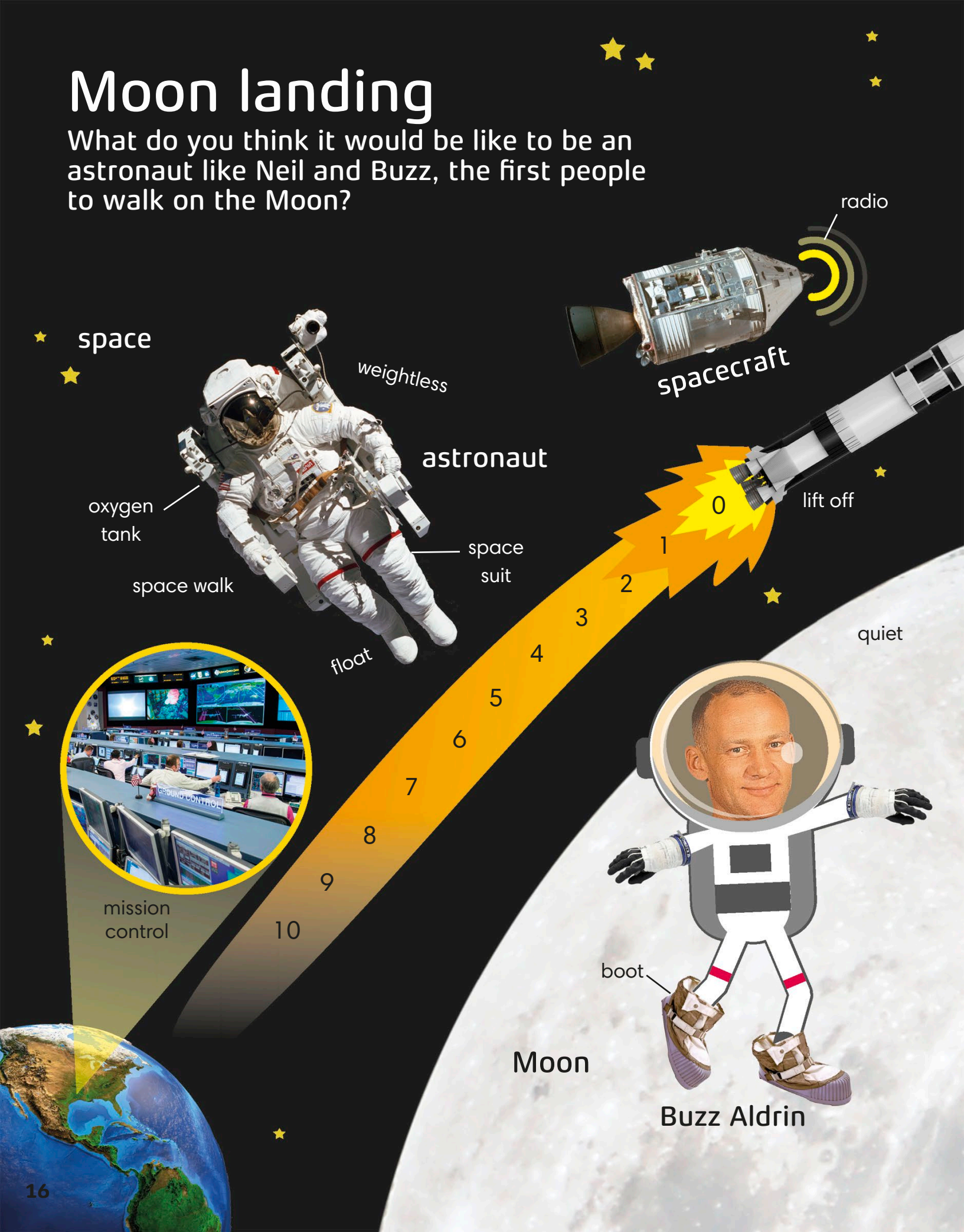
astronomer

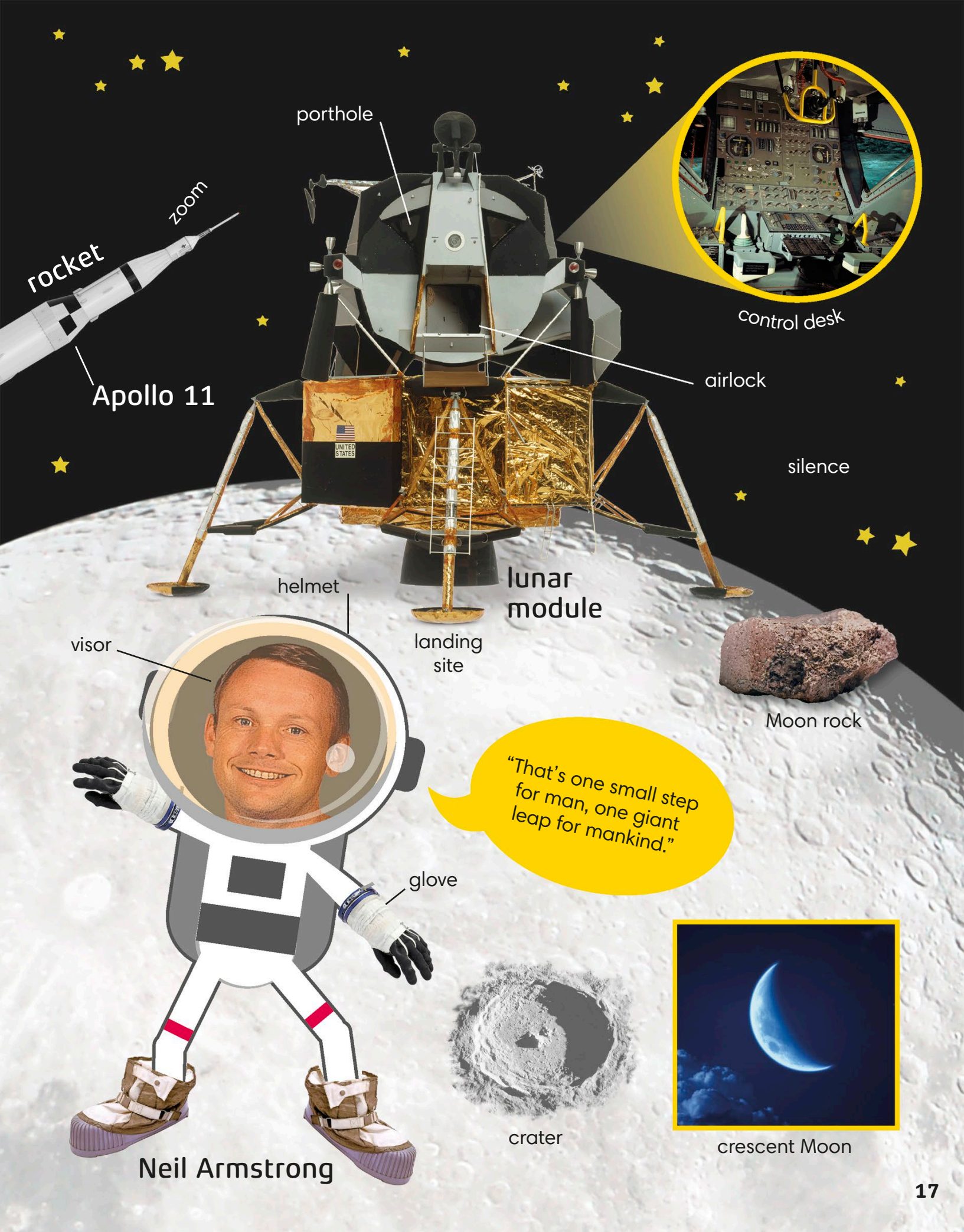
telescope

galaxy

Moon landing

What do you think it would be like to be an astronaut like Neil and Buzz, the first people to walk on the Moon?




porthole
zoom
rocket
Apollo 11
control desk
airlock
silence
lunar module
helmet
visor
landing site
Moon rock
"That's one small step for man, one giant leap for mankind."
glove
Neil Armstrong
crater
crescent Moon

Transport

There are lots of ways to travel. How many of these types of transport have you used?


air
aeroplane
glider
helicopter
parachute
jet plane
airport
horse and carriage
traffic lights
port
container ship
containers
sea
sailing boat
ferry
tandem
bicycle
tricycle
monorail
engineer
rail

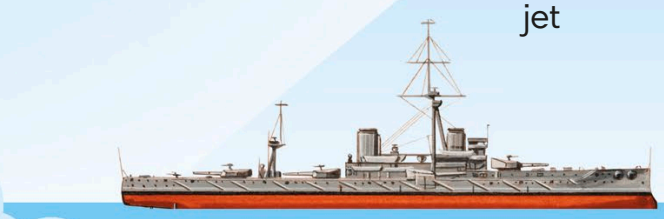
Vehicles

Many machines are designed to move people and things around. We call them vehicles.

fighter jet

lifeboat

speedboat



ship

submarine

army truck

tank

dump truck

cab

backhoe loader

caterpillar tracks

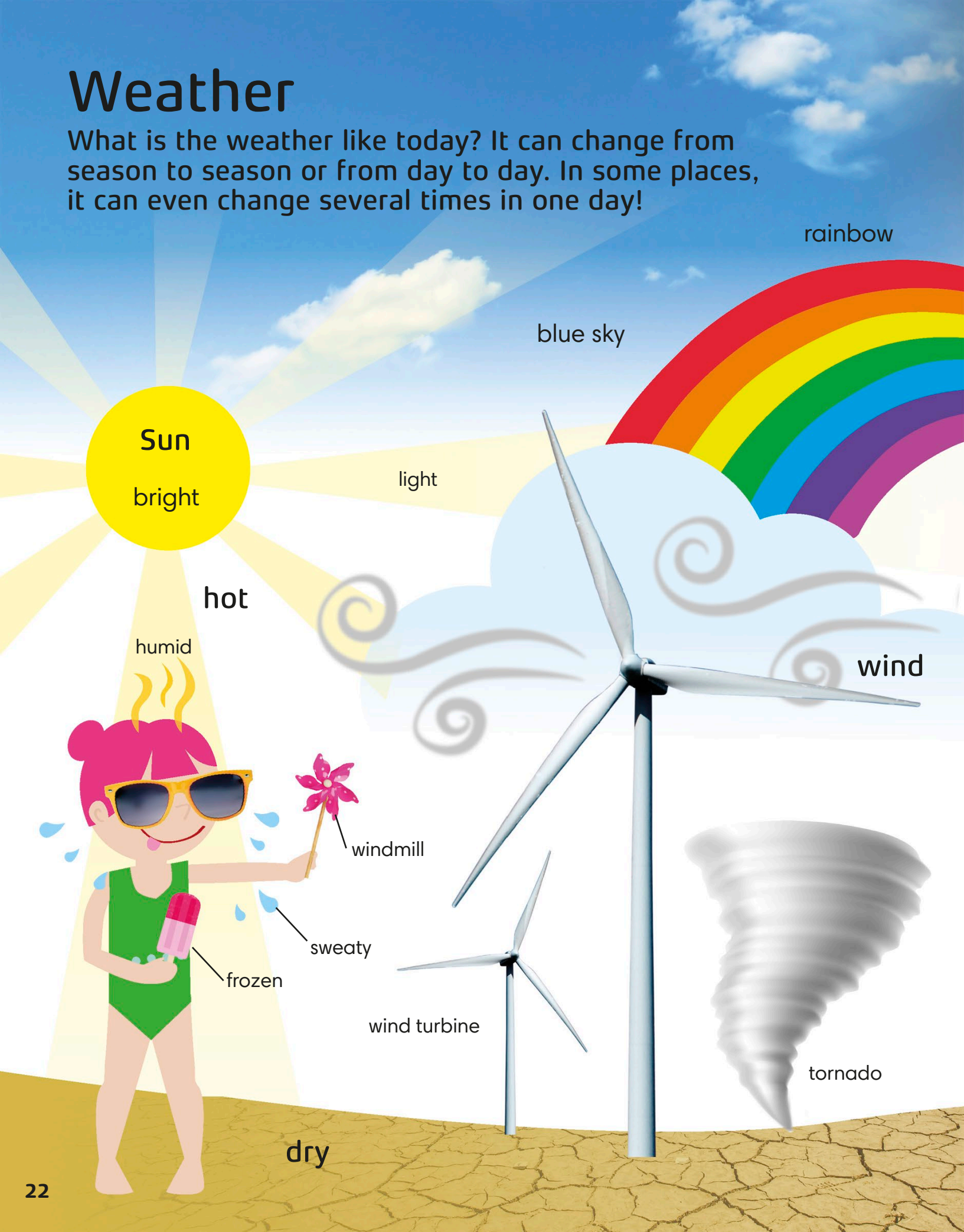
excavator

bulldozer


drone
horse box
combine harvester
baler
tractor
tyre
flag
spoiler
streamlined
pit stop
racing car
grip
motorbike
wheel
ramp
ambulance
police car
siren
fire engine
garage
crane
jack
car lift
mechanic

Weather

What is the weather like today? It can change from season to season or from day to day. In some places, it can even change several times in one day!



thunder

cloud

storm cloud

hail

storm

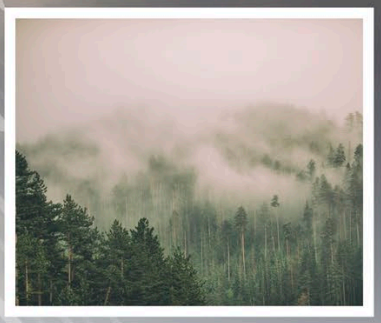
rain

raindrops

lightning

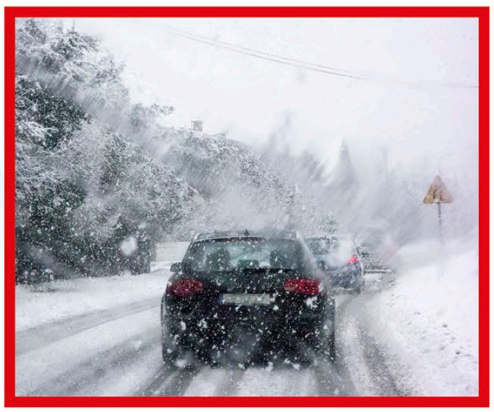
colours

showers



mist

drizzle



snowstorm

snow

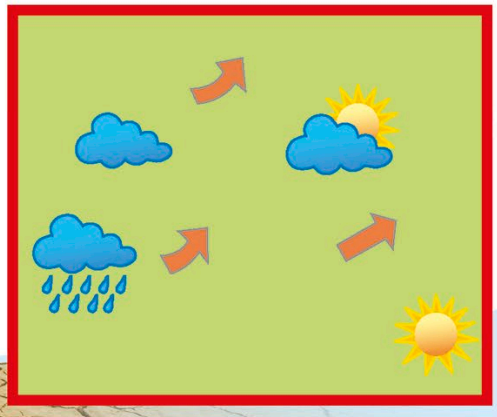
cold

wet

damp

ice crystal

chilly

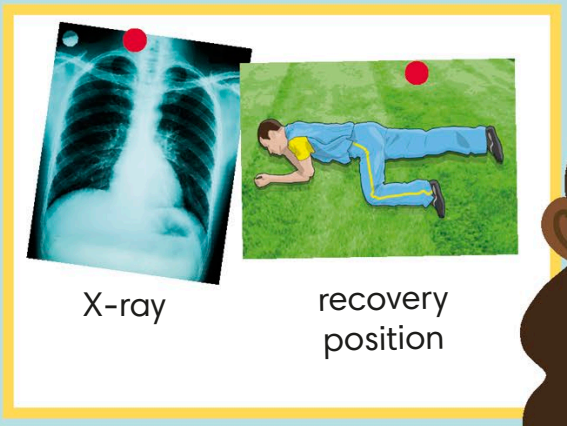


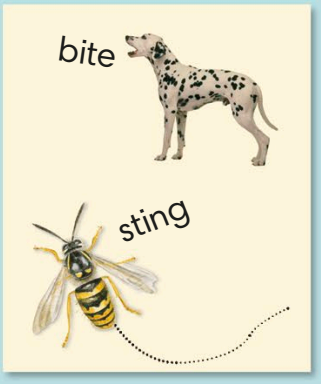
forecast

At the doctor's

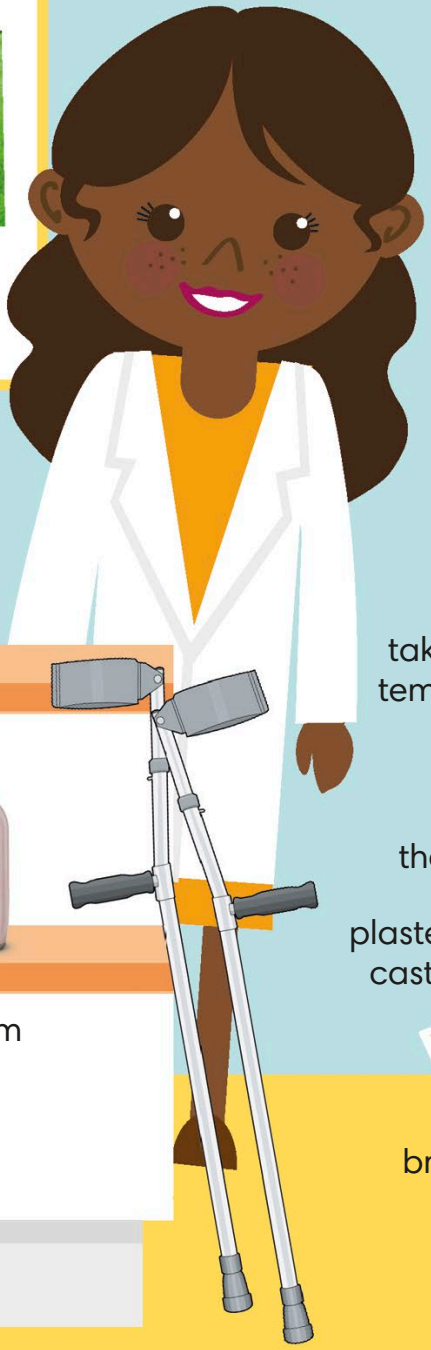
The doctor can work out what is wrong with us and help us to get better when we are poorly.

doctor's surgery





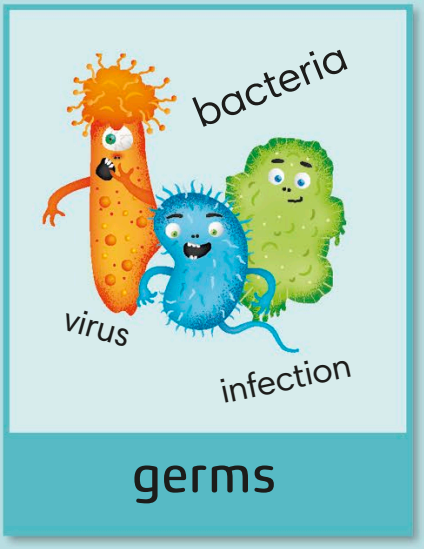
doctor

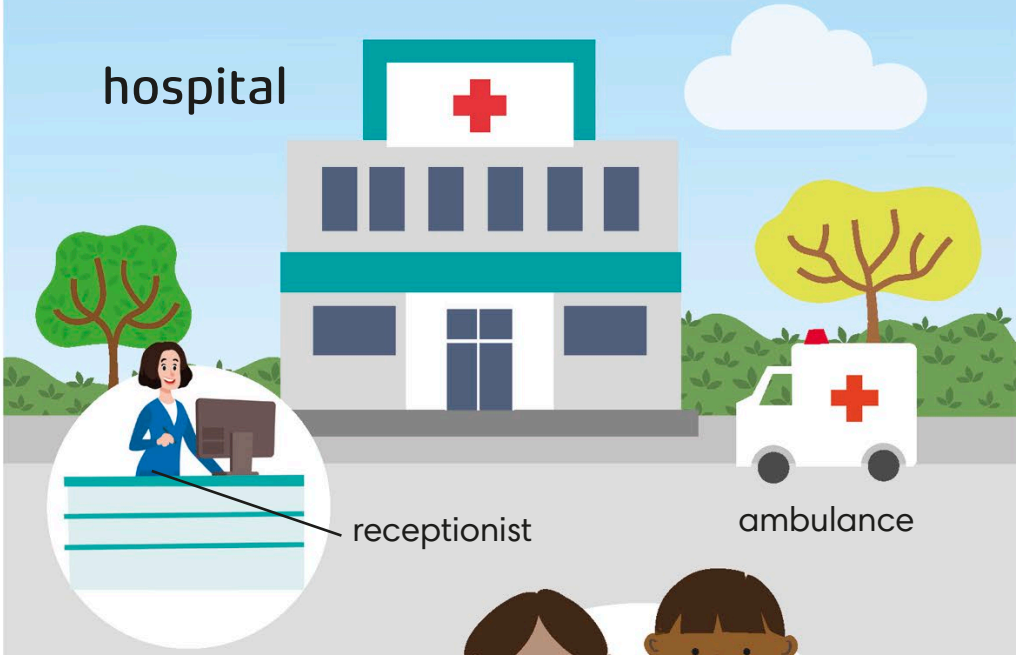


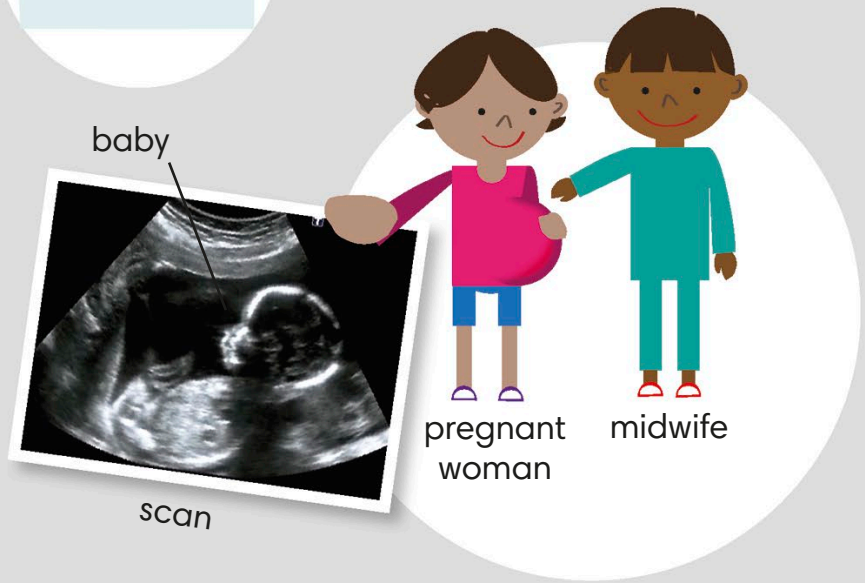
medicine

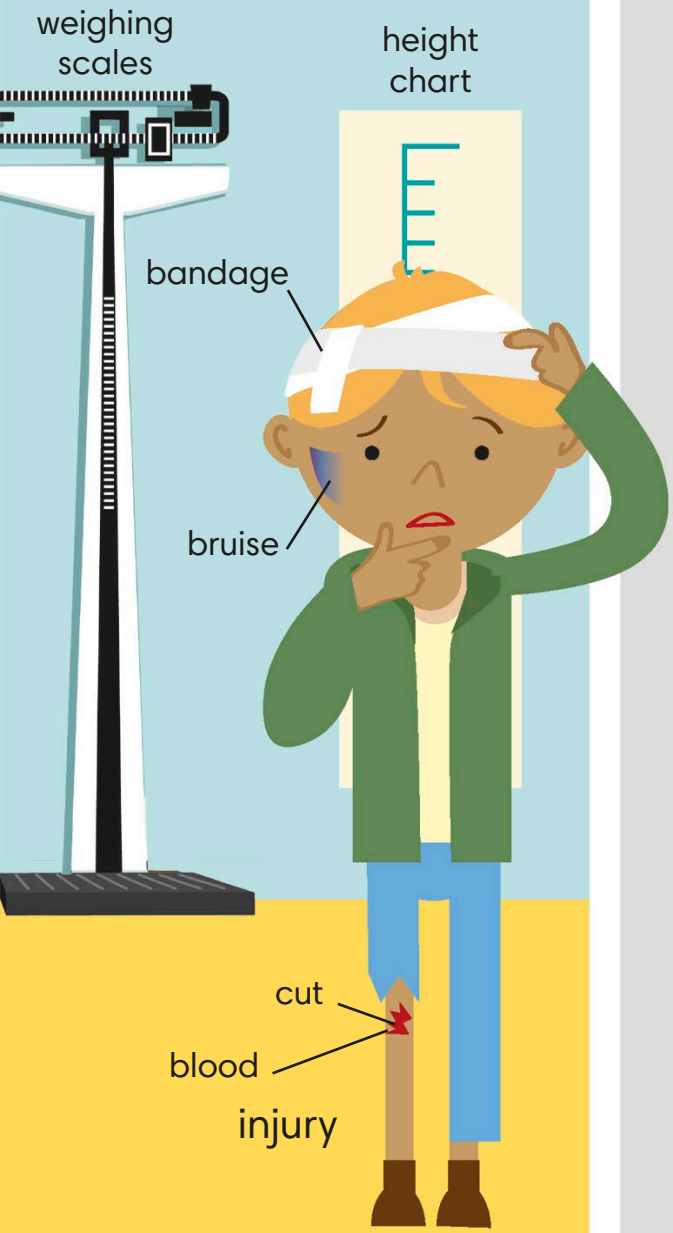
crutches

wheelchair


bacteria
virus
infection
germs


hospital
receptionist
ambulance

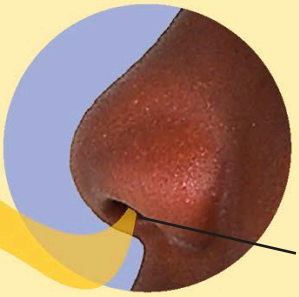

baby
scan
pregnant woman
midwife


weighing scales
height chart
bandage
bruise
cut
blood
injury

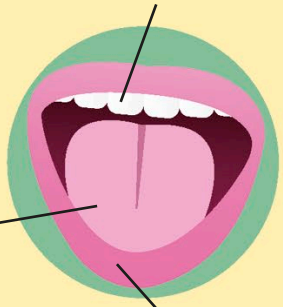

operation
nurse
mask
surgeon
gloves
heart monitor
patient
operating table

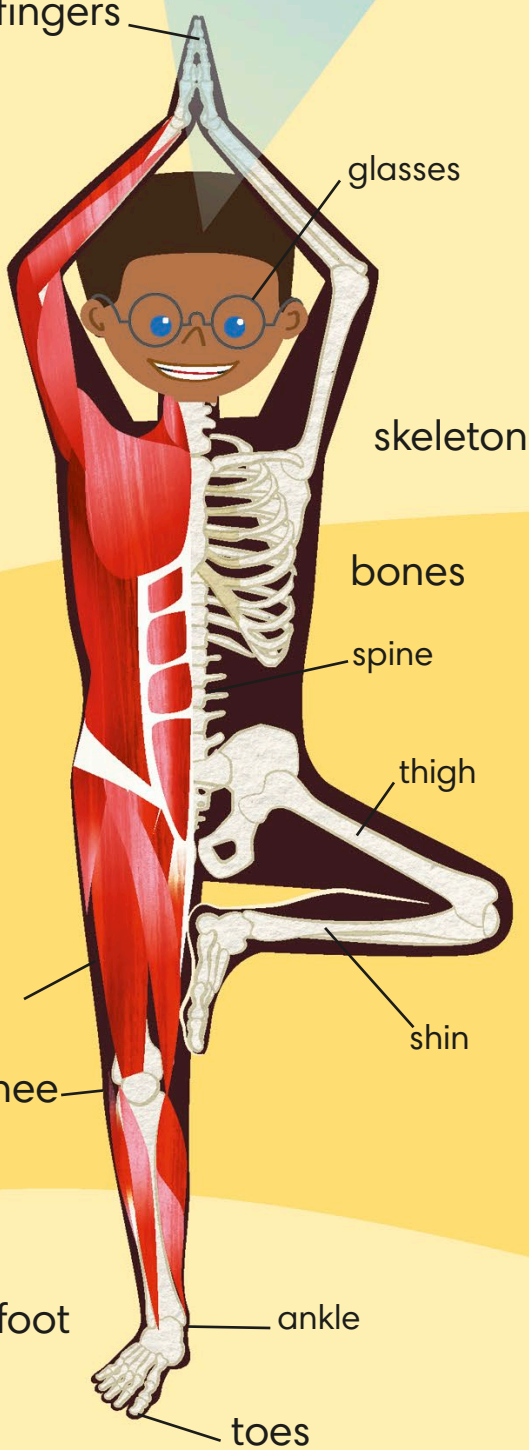
Human body

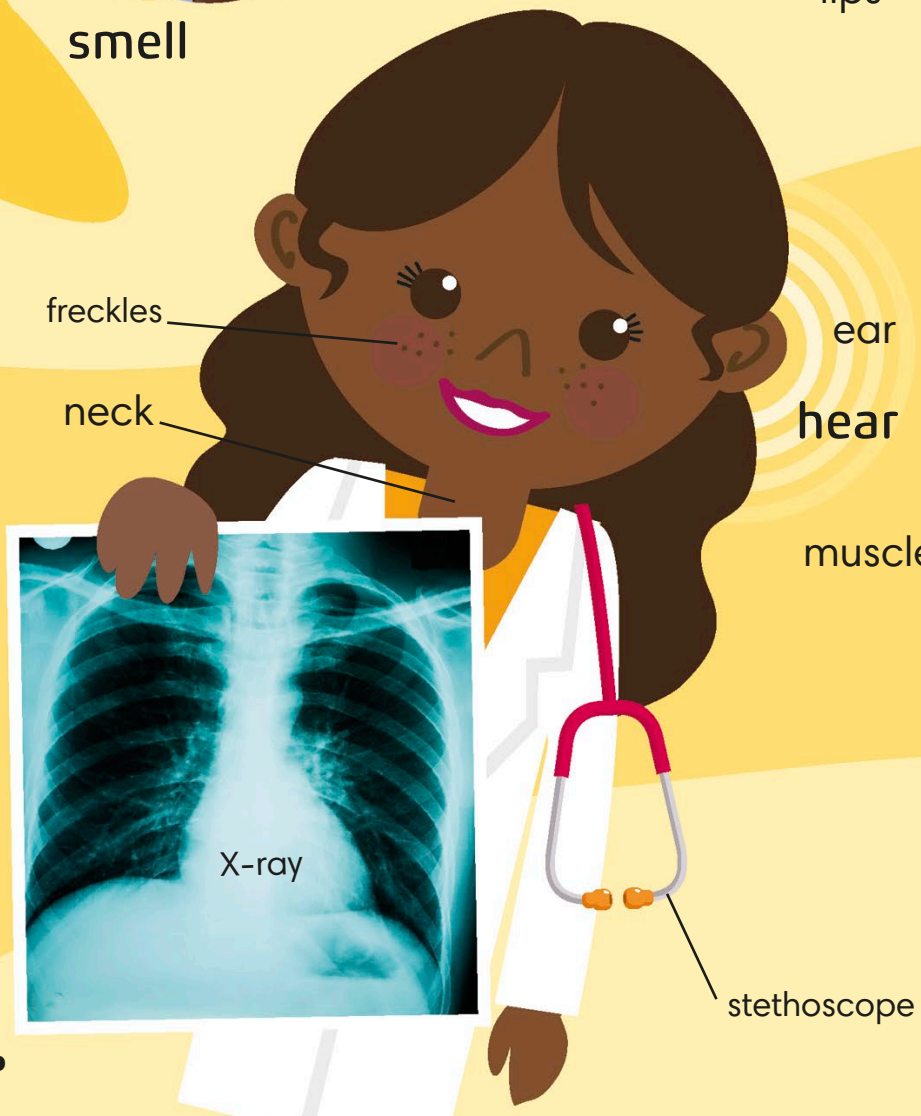
Your body is amazing! It has so many parts, and it can do so many wonderful things!



smell

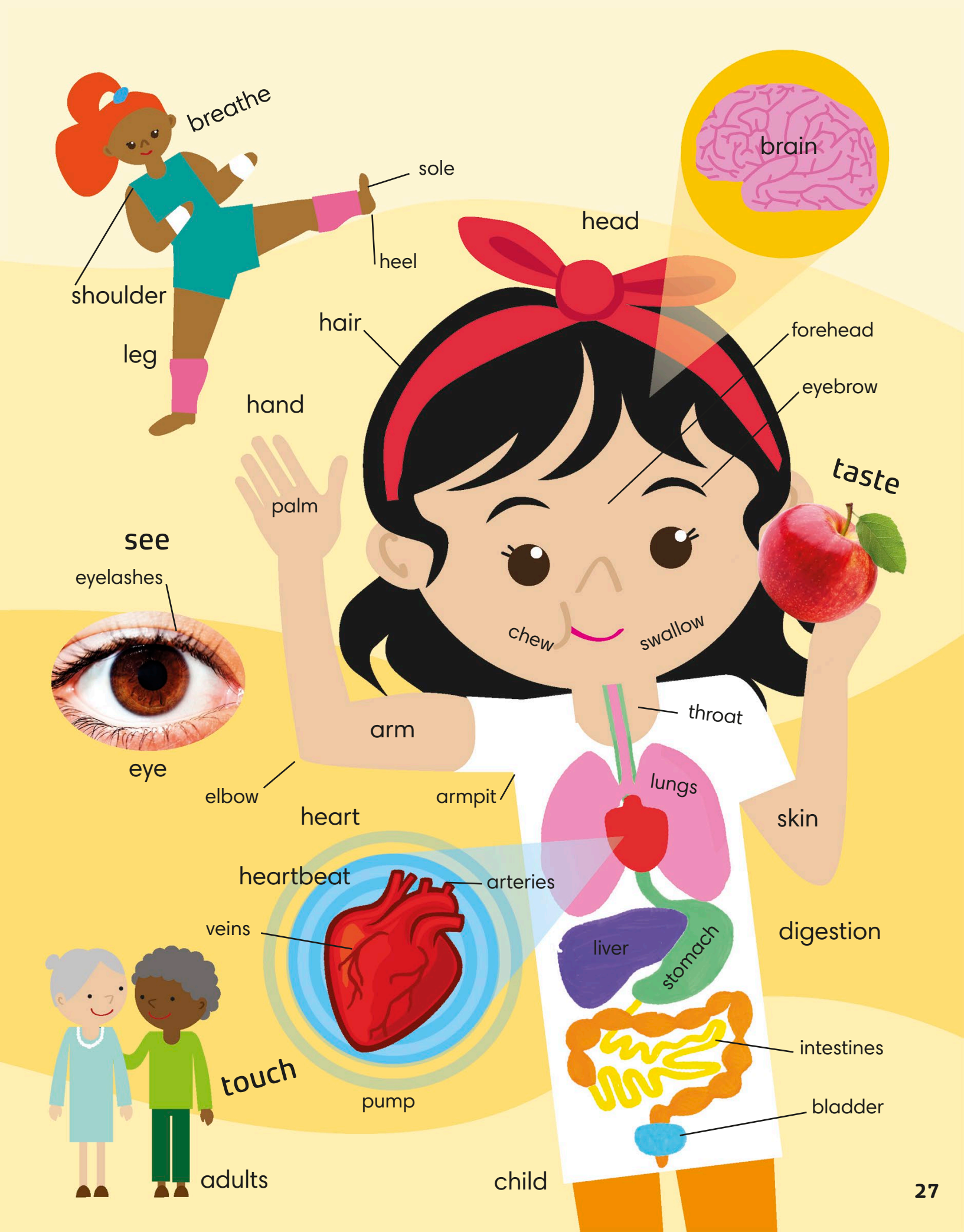






ear

hear


breathe
sole
heel
shoulder
leg
brain
head
hair
forehead
eyebrow
hand
palm
taste
see
eyelashes
chew
swallow
throat
arm
eye
elbow
armpit
lungs
heart
skin
heartbeat
arteries
veins
digestion
liver
stomach
intestines
bladder
touch
pump
adults
child

Materials

The world is made of many different materials. Some are rare, and some you might see every single day!

iron

diamond

hard

steel

metals

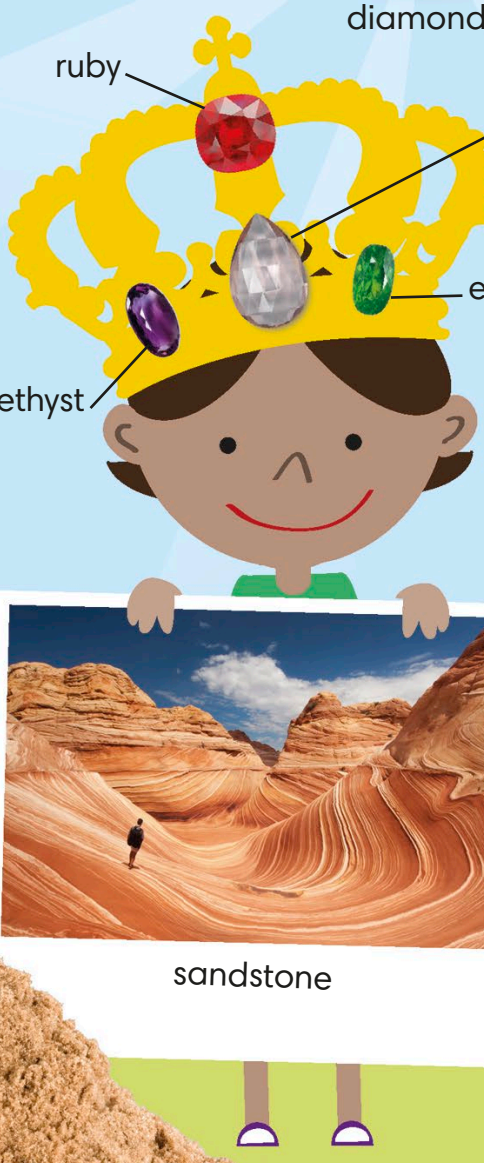
copper

ruby

crystal

emerald

amethyst



sandstone

lava

explosive

flint

pebble

gravel

clay

granite

sand

rock

solids

ice crystal

icicle

freeze

melt

paper

salt crystal

sugar crystal

elastic

rubber band

plastic

man-made

cotton

recyclable

biodegradable

wool

wood

natural

shell

pearl

brittle

sponge

absorbent

coral

oxygen

hydrogen

poisonous

nitrogen

carbon dioxide

air

gases

rain

glass

water

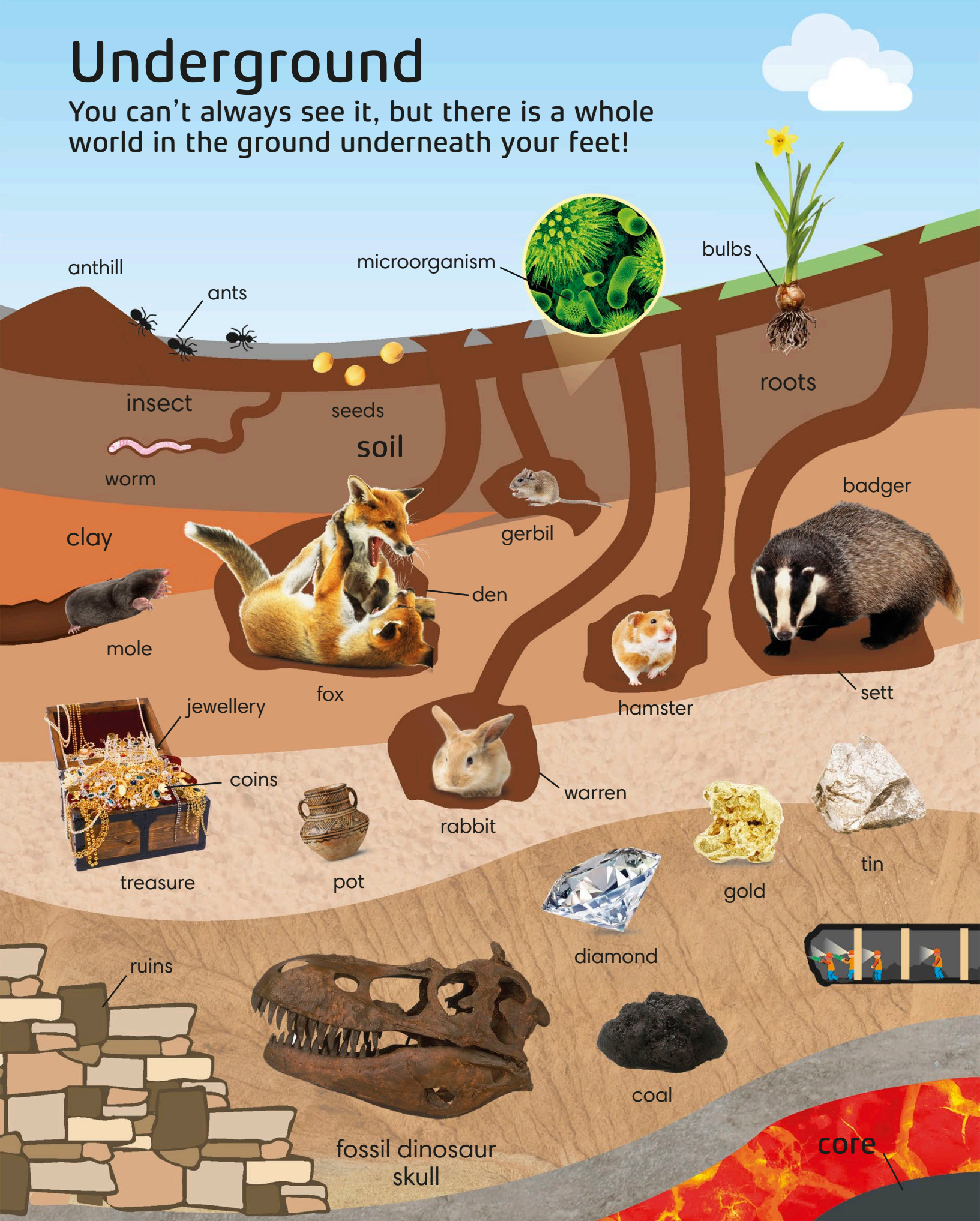
acid

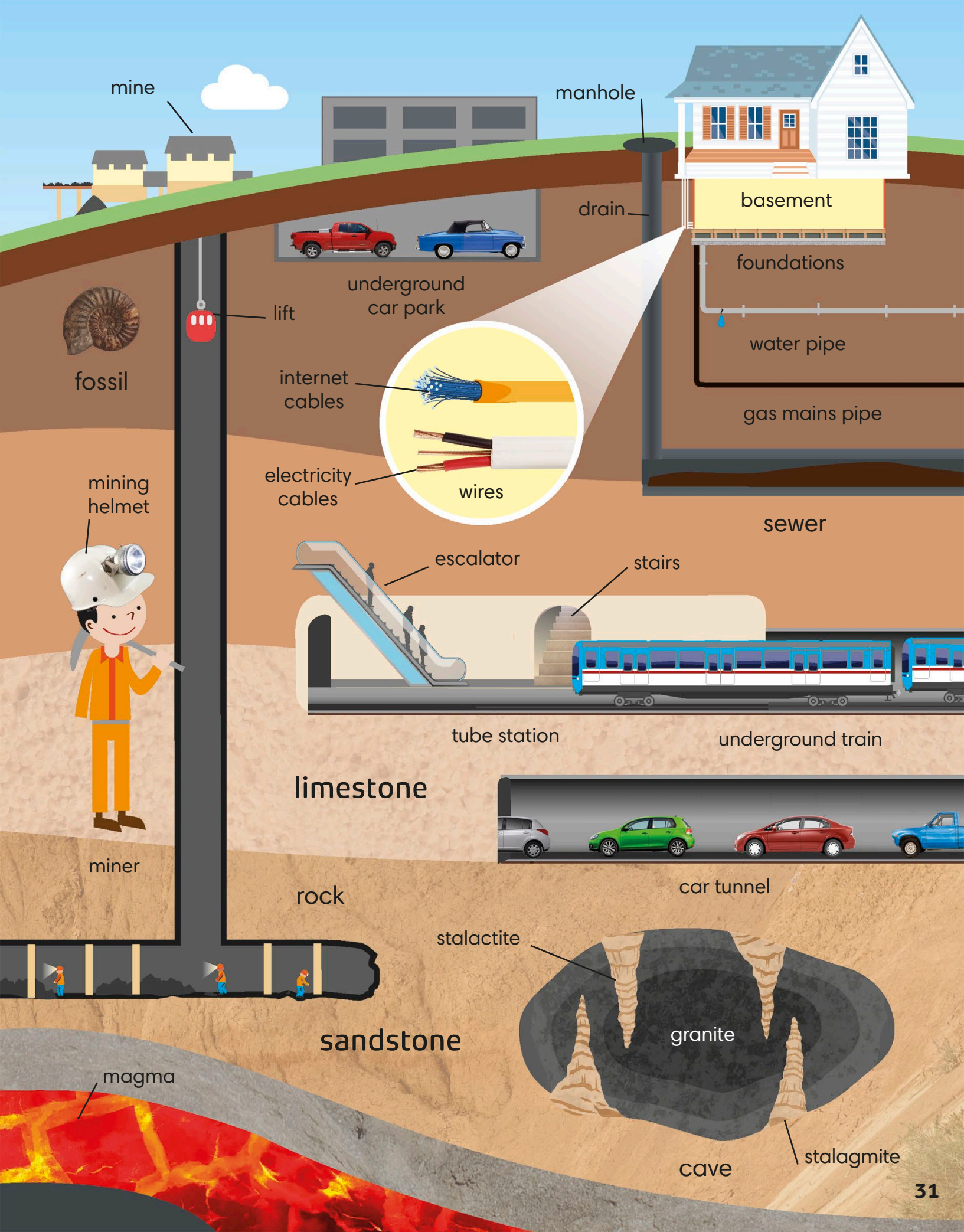
washing-up liquid

liquids

Underground

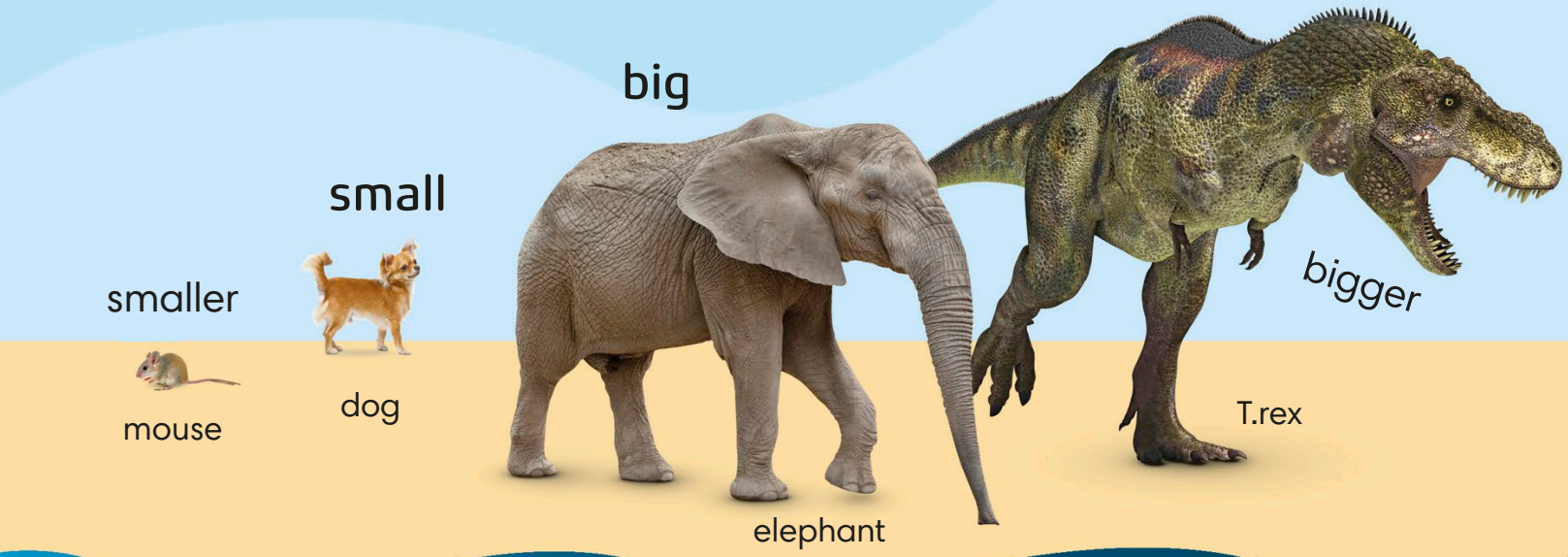
You can't always see it, but there is a whole world in the ground underneath your feet!

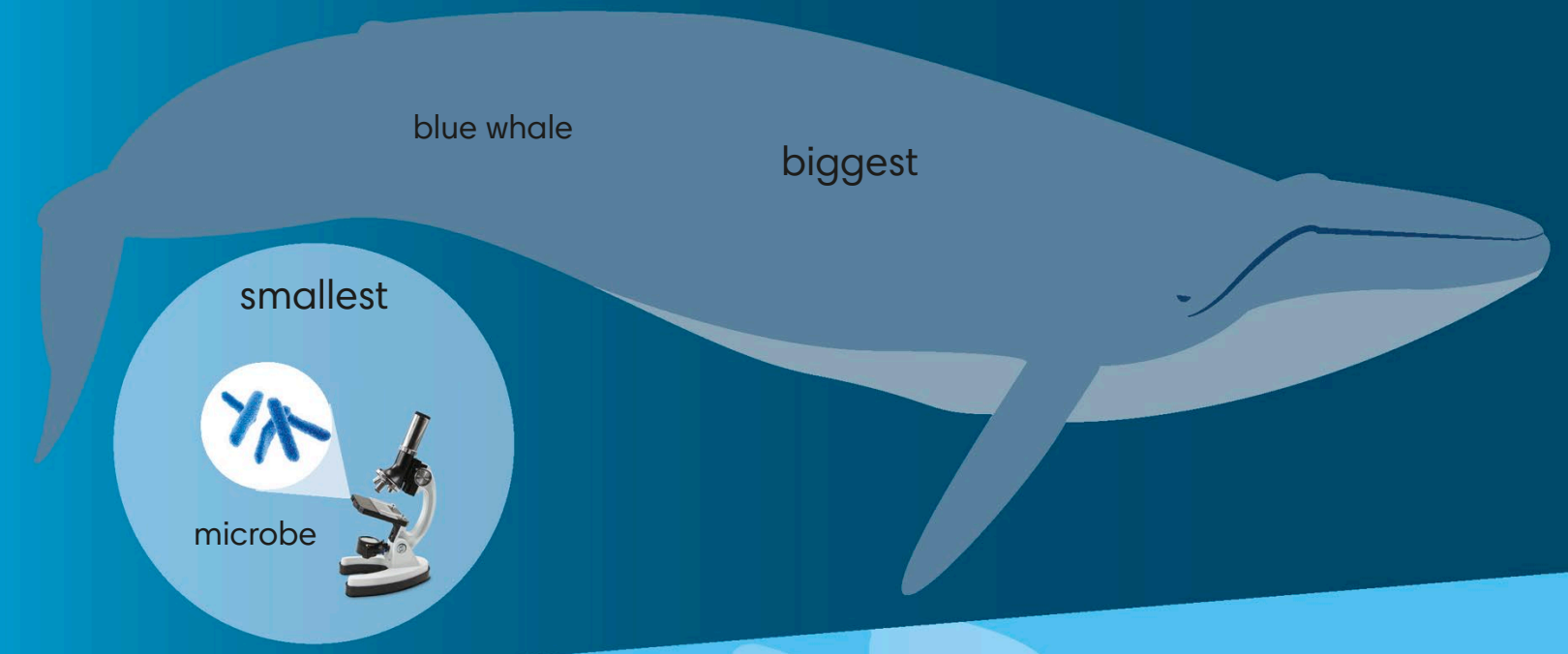



mine
manhole
basement
drain
underground car park
foundations
lift
water pipe
fossil
internet cables
gas mains pipe
electricity cables
wires
sewer
mining helmet
escalator
stairs
tube station
underground train
limestone
miner
car tunnel
rock
stalactite
granite
sandstone
magma
cave
stalagmite

Comparisons

You might be tall. You might be short. You might be early or late, or hot or cold. These kinds of words help us to describe and compare things.



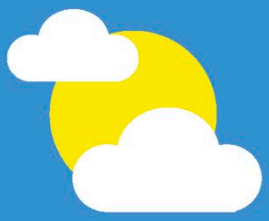


darker

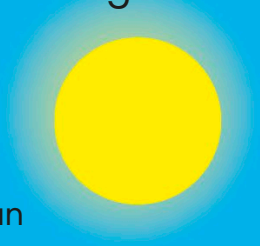
Moon

dark

bright



brighter



Sun

equal

balance

light

feather

heavy

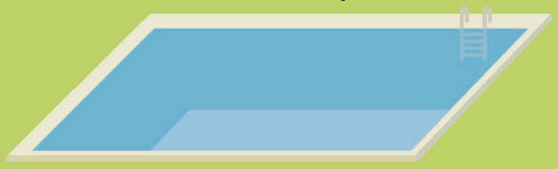
rock

unequal

shallow

bath

deep



swimming pool

deeper

ocean

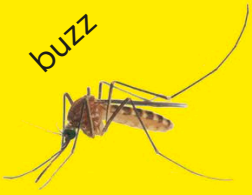
quieter

quiet

loud

louder

loudest



mosquito

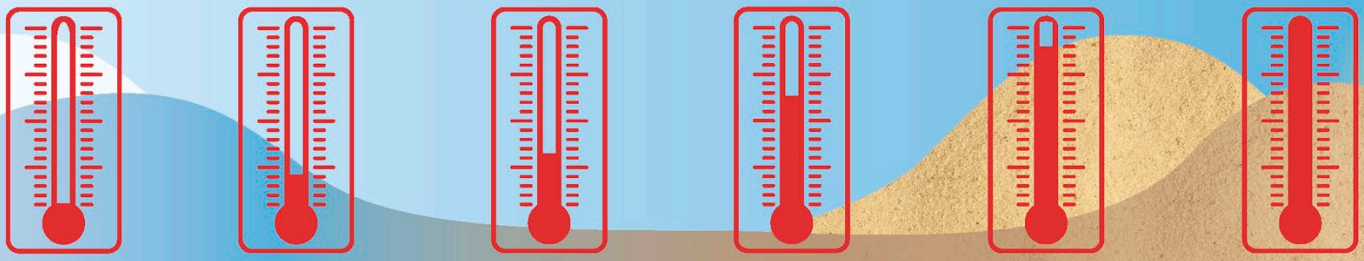
cat

crying baby

trumpet

siren

temperature



coldest

colder

cold

hot

hotter

hottest

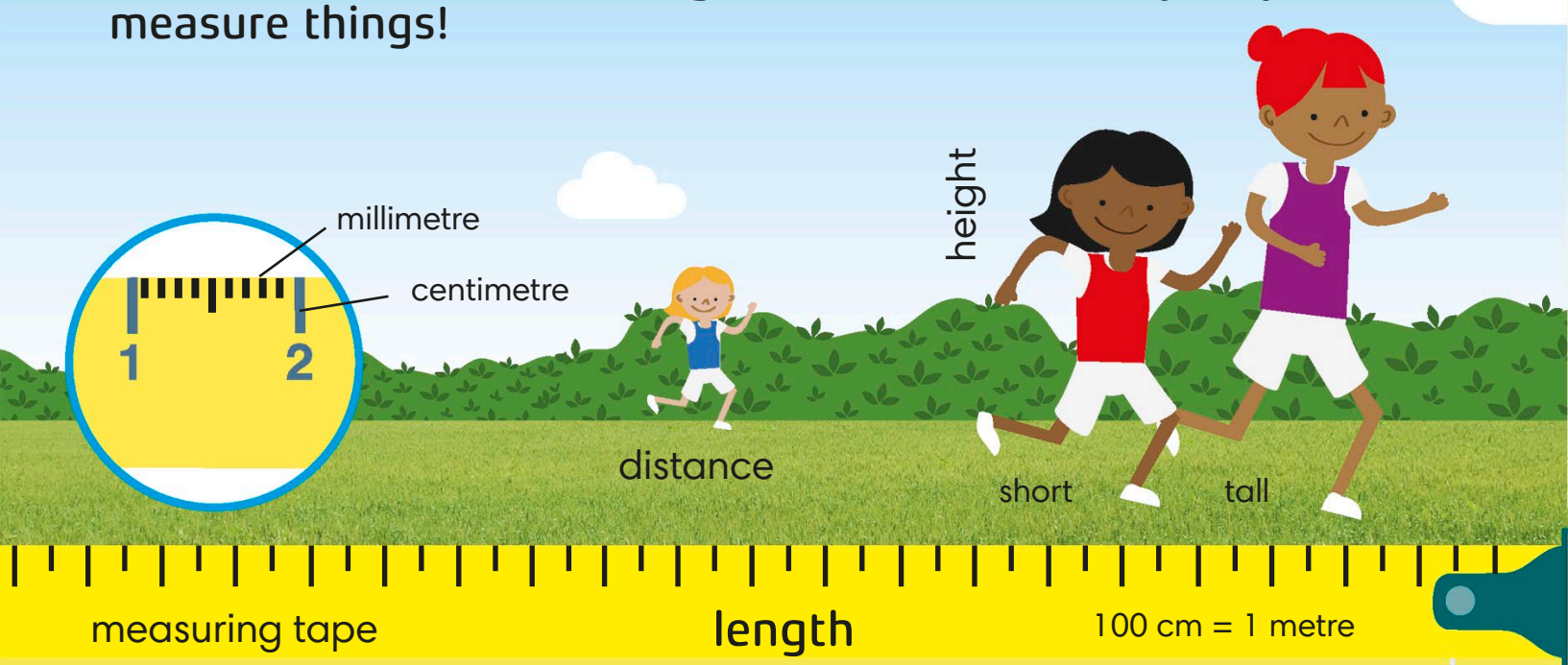
Junk

What happens to all the things we throw away? How many of these things can be reused or recycled?


rubbish
crusher
incinerator
toxic waste
compactor
reduce
plastic bottles
garden waste
recycle
decompose
plastic
wood
compost
boxes
food waste bin
garden waste bin
electronics
glass
card
recycling bin
paper
lights
sorting
foil
packaging
wrappers
batteries
conveyor belt
litter

Measuring

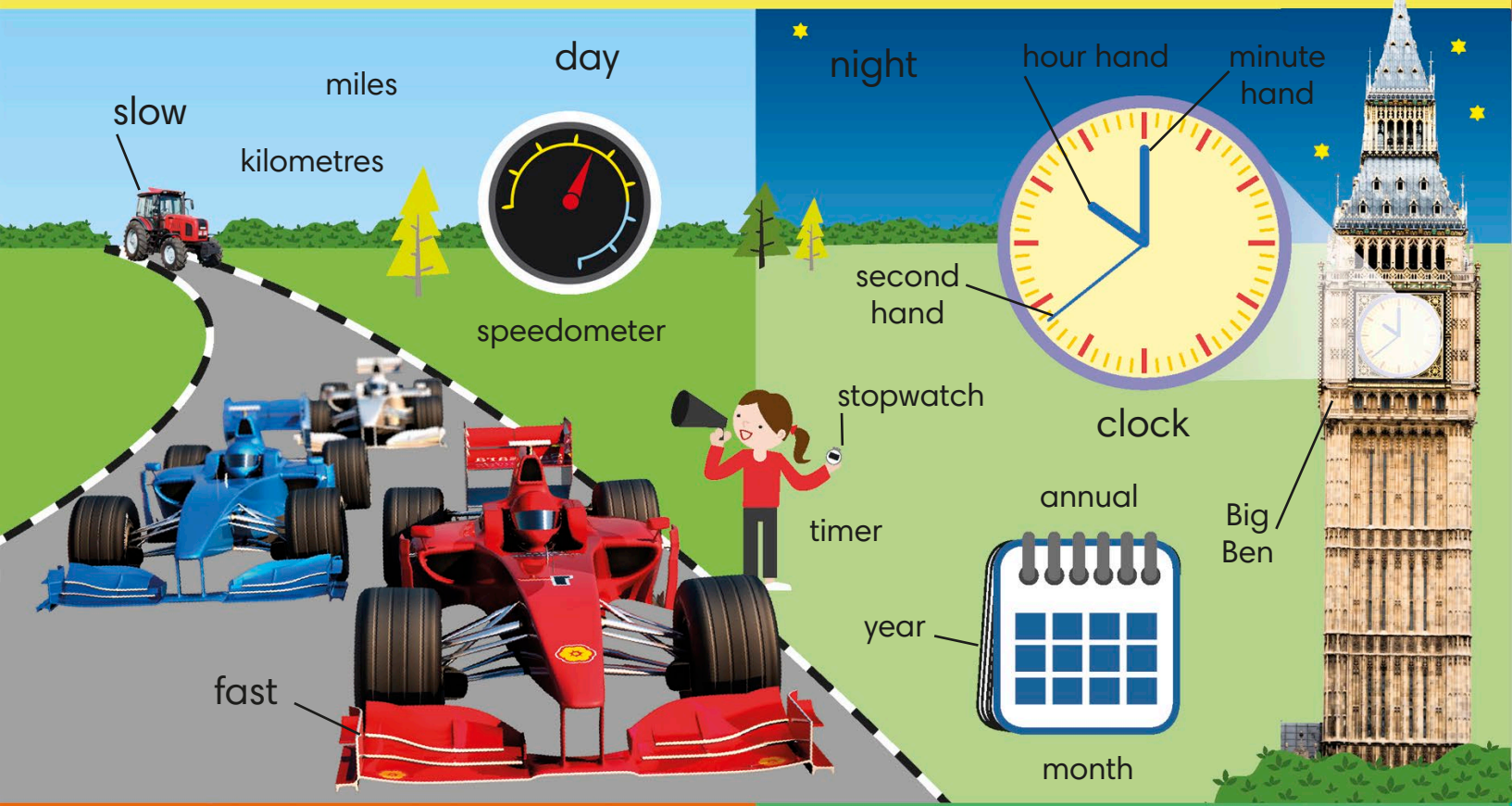
If you are doing an experiment or making something, you often need to measure things. And there are many ways to measure things!



measuring tape

length

100 cm = 1 metre

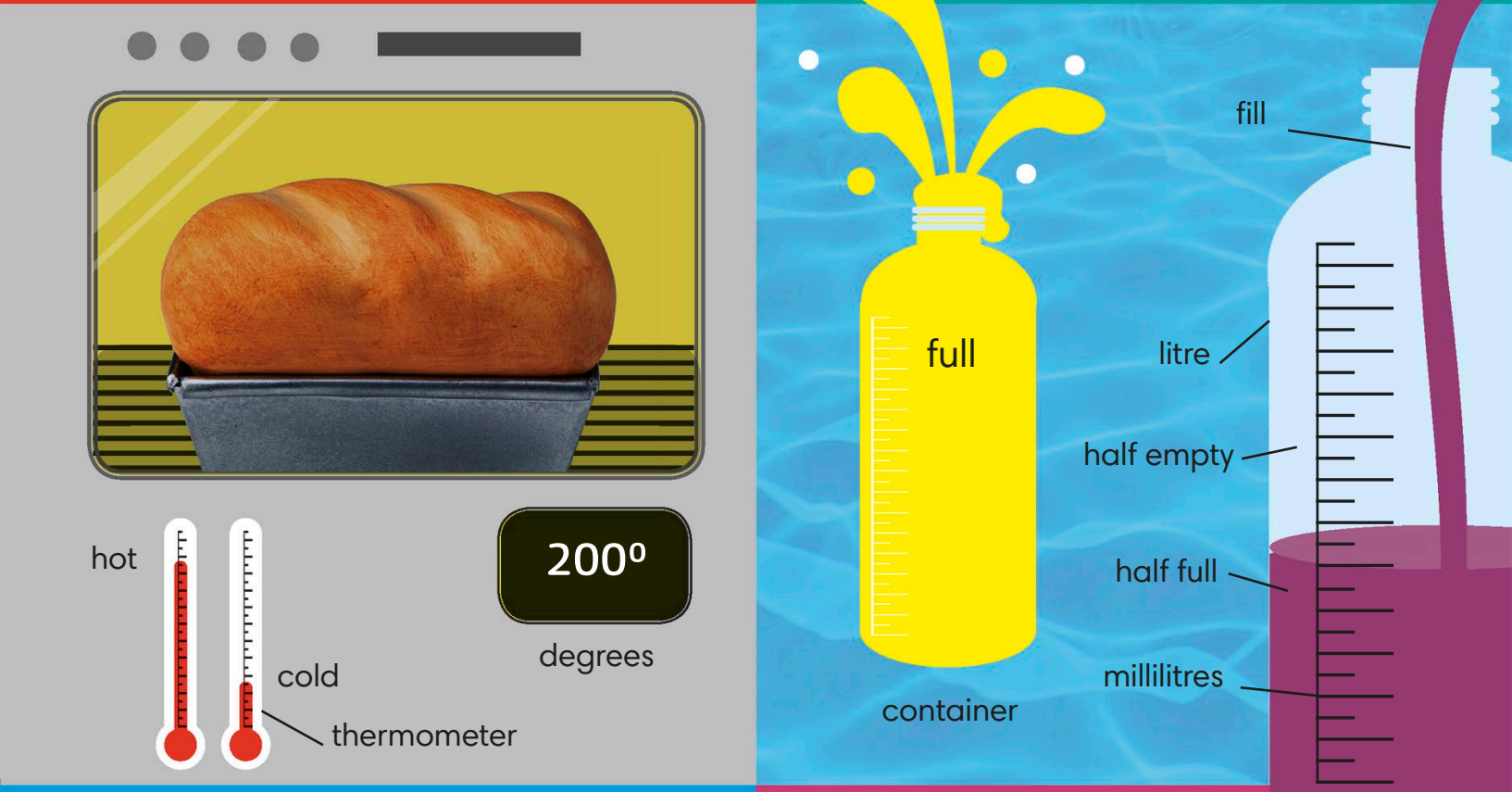


speed

time

money

weight



temperature

volume

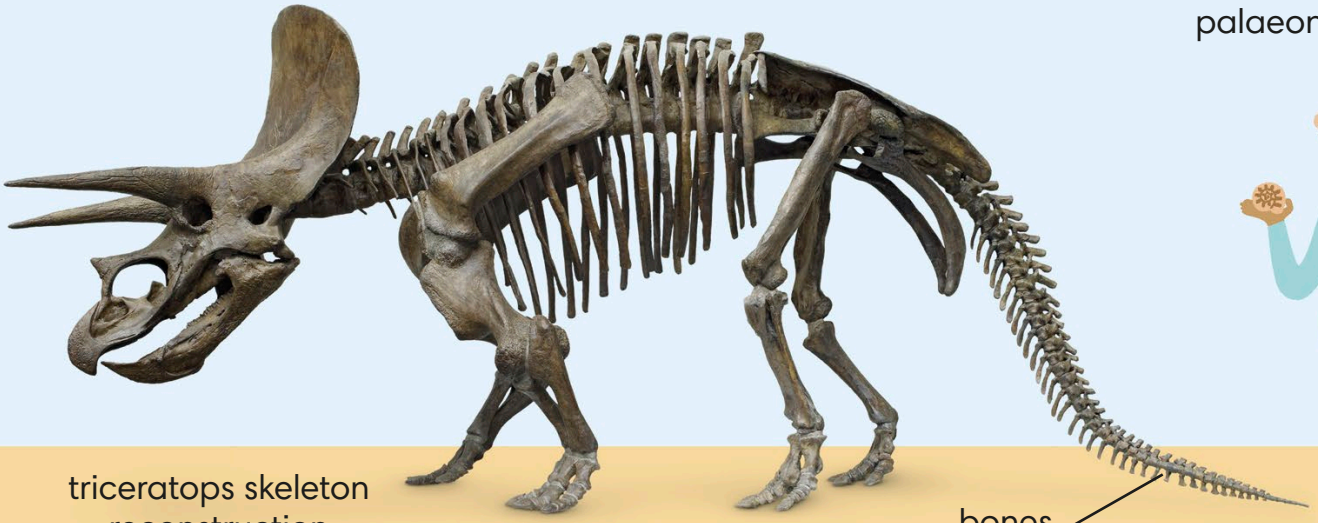
Up high

Look up! There are lots of things going on up there. What can you see above you?


satellite
star
meteor
planet
Moon
Sun
jet stream
biplane
aeroplane
travel
hang glider
cumulus clouds
skydiver
glide
snowflakes
parachute
Chinook
pollen
vapour trail
rain
flying
seagull
red kite
butterfly
birds
pigeon
swallow
Everest
mountain
mist
control tower
wind turbine
windsock
phone mast
jet pack

Long ago

65 million years ago, dinosaurs were alive. 2.6 million years ago, large areas of the Earth were covered in ice. The Earth looks very different today.



triceratops skeleton reconstruction

bones

palaeontologist

fossils

ammonite

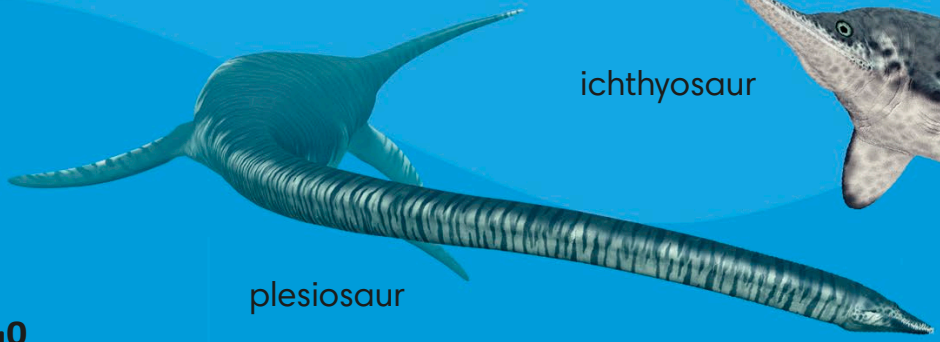
dinosaur poo

amber

albertosaurus skull

teeth

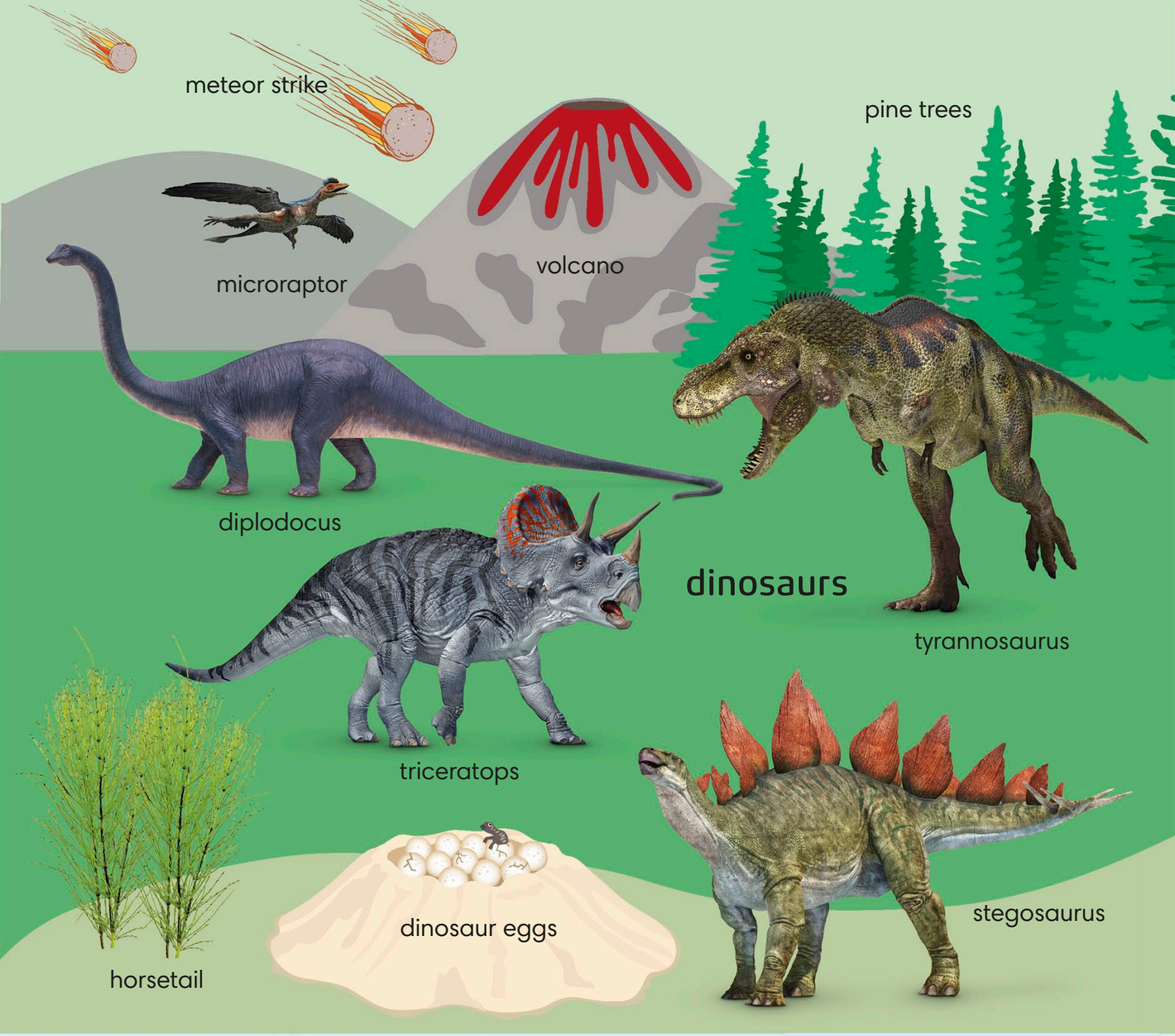
plesiosaur foot



plesiosaur

ichthyosaur

horseshoe crab

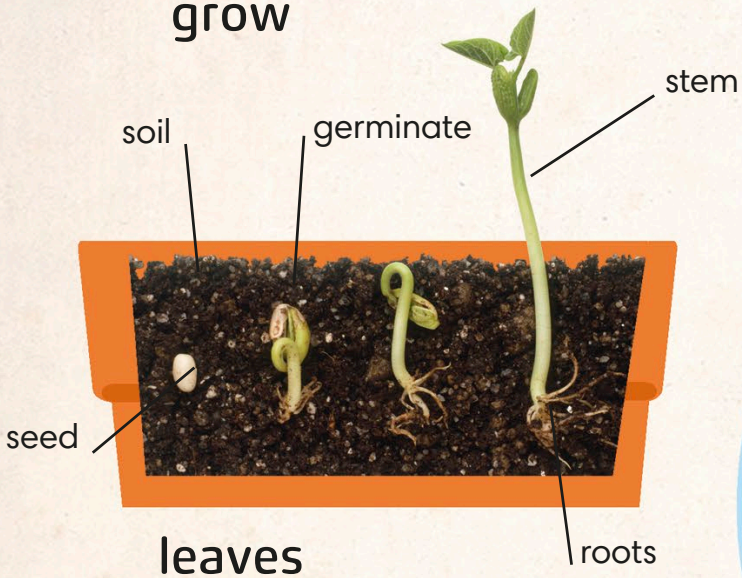

meteor strike
pine trees
volcano
microraptor
diplodocus
dinosaurs
tyrannosaurus
triceratops
horsetail
dinosaur eggs
stegosaurus


ice age
saber tooth tiger
giant ground sloth
mammoth

Plants

Plants are really important to our planet. They make their food from the carbon dioxide we breathe out, and they release oxygen back into the air for us to breathe in.

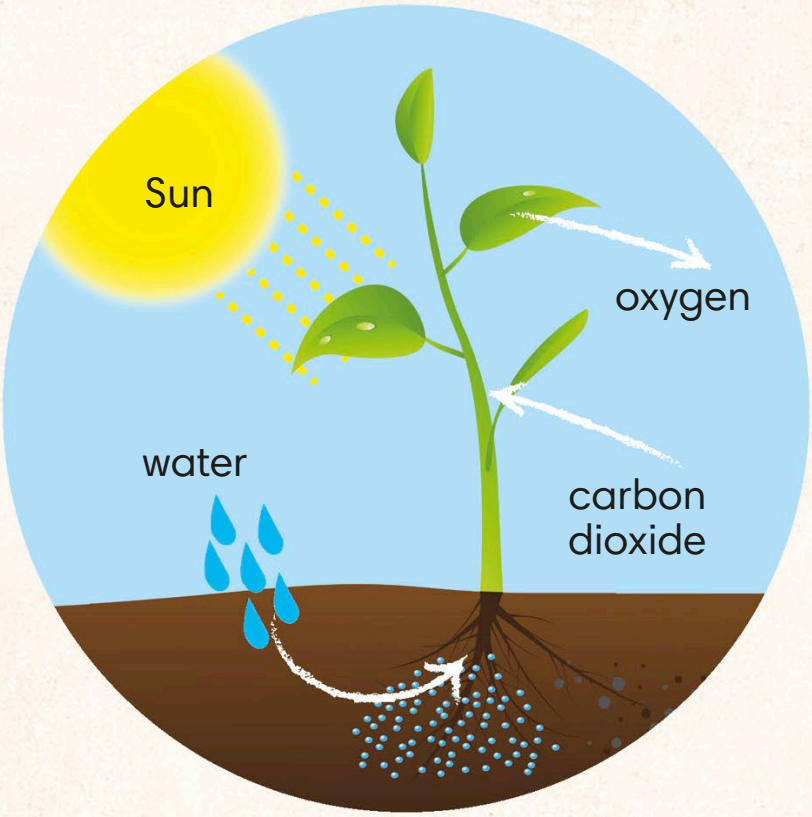
grow



leaves

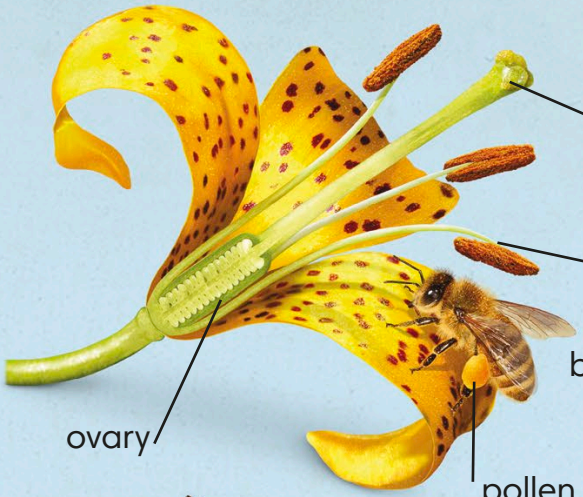
serrated palmate lobed

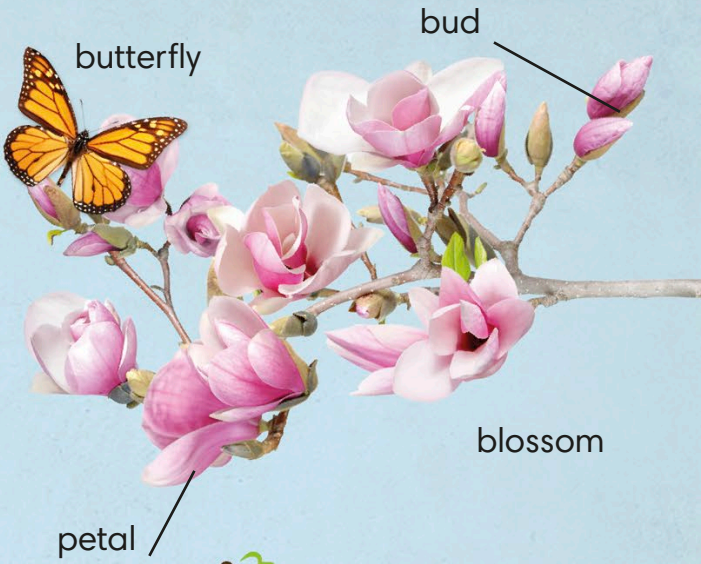
photosynthesis



trees

flowers





pollinator

plants


pine cone

soya beans


moss

climbing plant


cactus

fruits


nuts


apple

avocado


mango

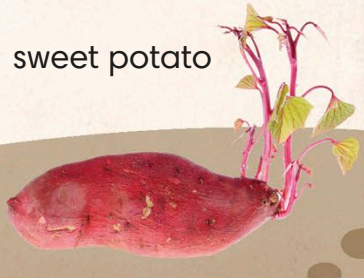

cherries

vegetables

bulb

rhizome

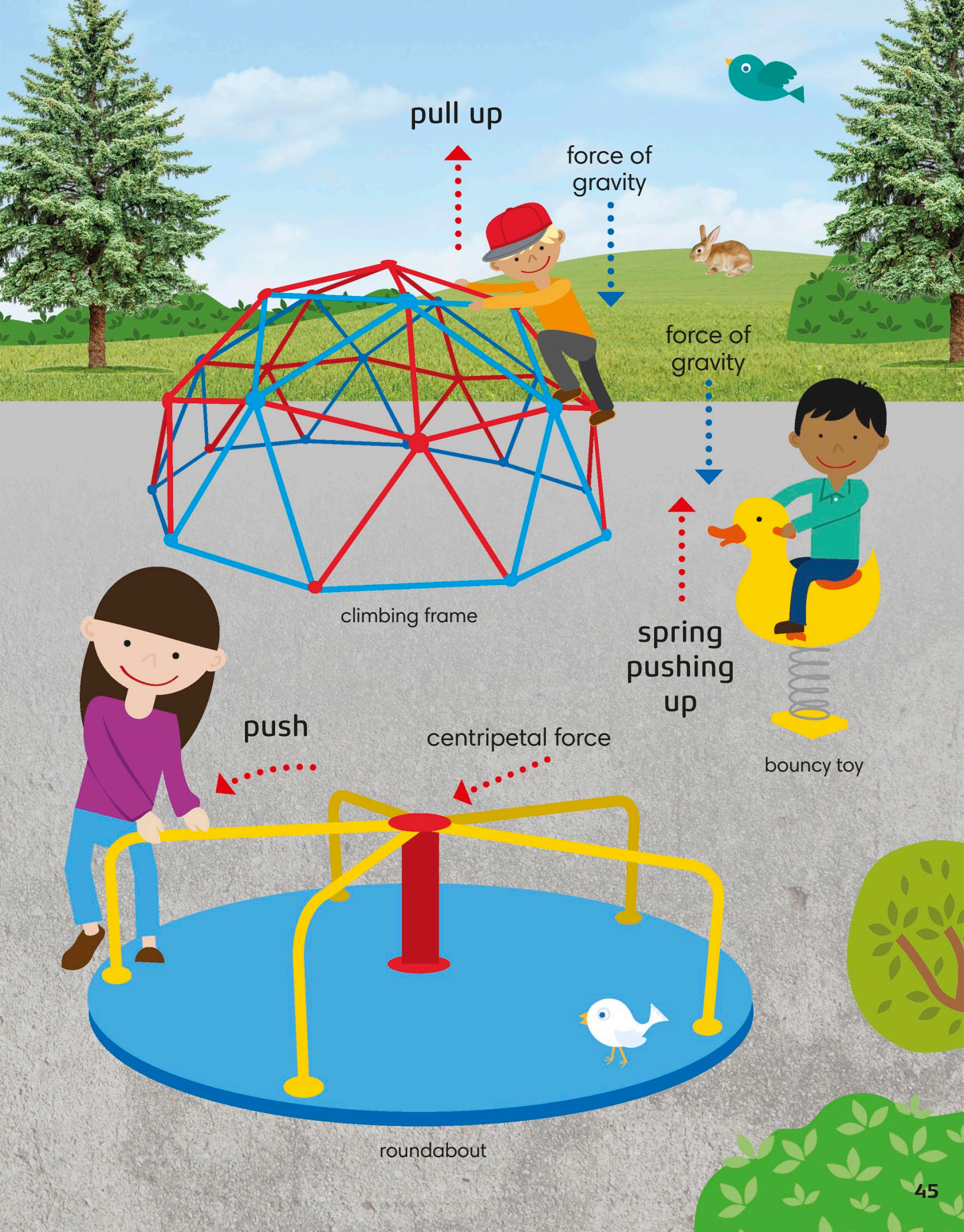
root vegetable



tuber

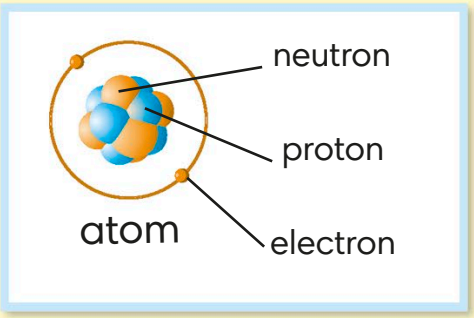
Playground forces

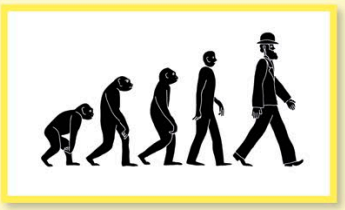
It's fun to play at the park, but did you know that parks are full of science? You are using forces all the time when you play!


pull up
force of gravity
force of gravity
spring pushing up
push
centripetal force
climbing frame
bouncy toy
roundabout

Laboratory

Some scientists work in a laboratory. Different scientists use different equipment. What kind of scientist would you like to be?





evolution

chemistry

chemist

safety goggles

chemical

test tube

liquid

funnel

experiment

gas

mix

Bunsen burner

conical flask

biologist

lab coat

magnifying glass

observe

biology

plant

acid

idea

zoologist

measure

animal

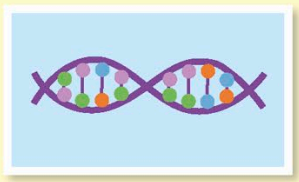
specimen jar

engineer

diagram

machine

laser



DNA

pull

pulley

gravity

solid

energy

force

test

physicist

physics

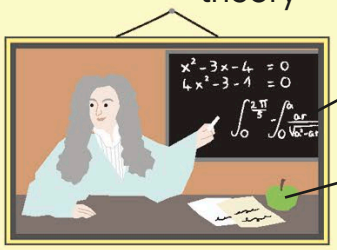
lever

acceleration

motion

prediction

theory



results

evidence

Isaac Newton

space

astronomer

telescope

doctor

nurse

rocket scientist

magnet

beaker

body

stethoscope

palaeontologist

microbiologist

fossil

petri dish

bacterium

sample

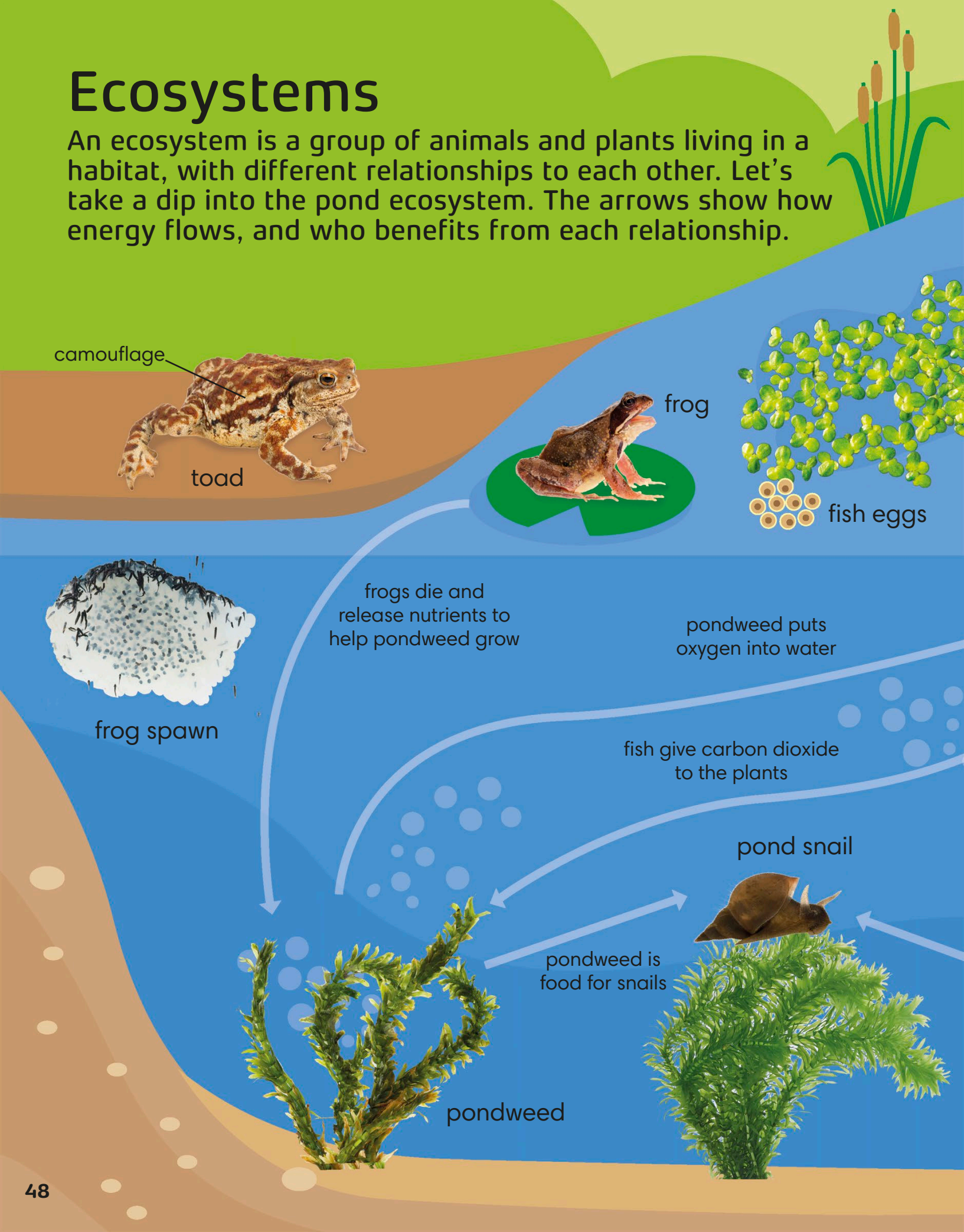
virus

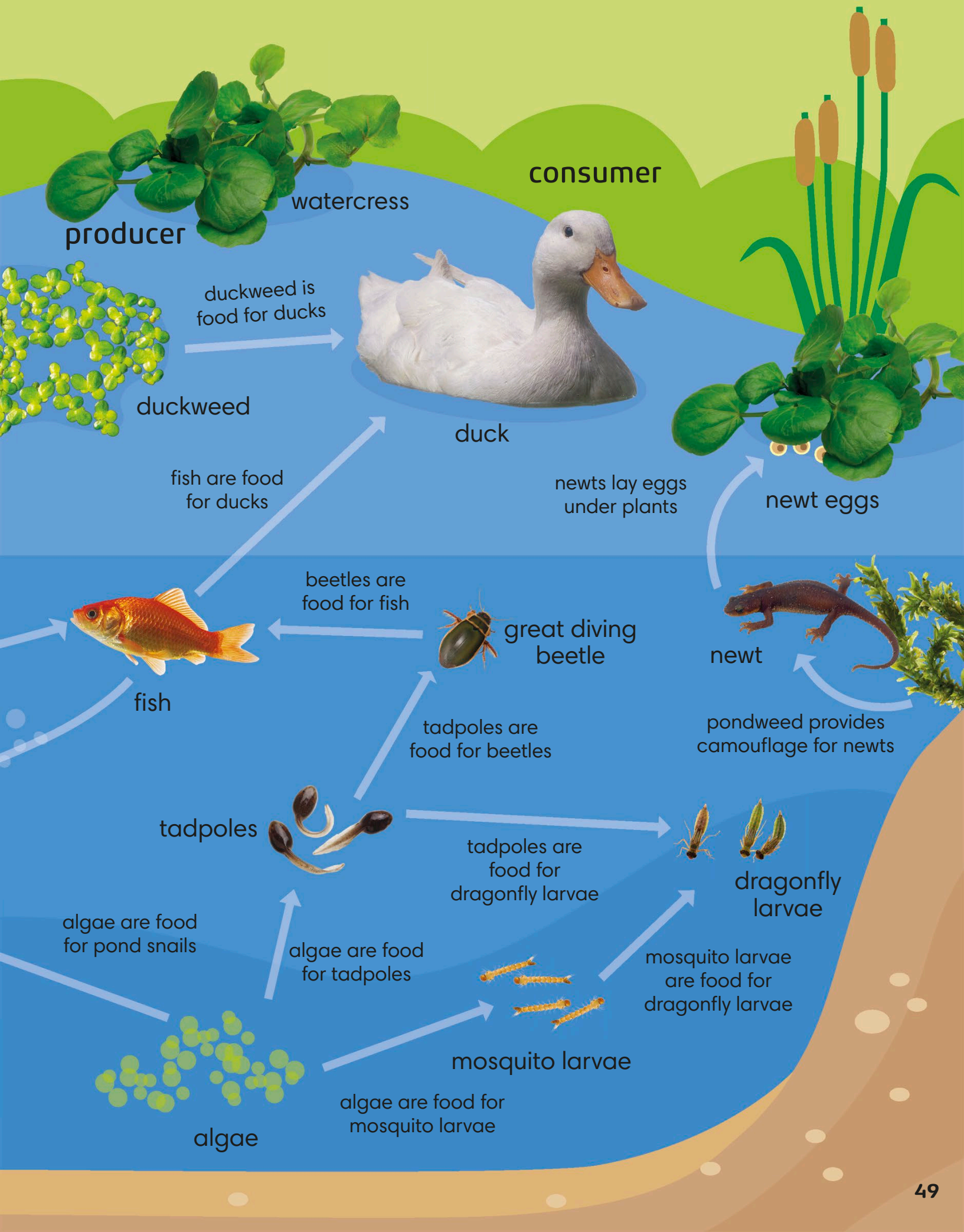
microscope

virologist

Ecosystems

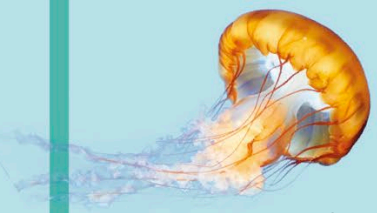
An ecosystem is a group of animals and plants living in a habitat, with different relationships to each other. Let's take a dip into the pond ecosystem. The arrows show how energy flows, and who benefits from each relationship.




producer
watercress
consumer
duckweed
duckweed is food for ducks
duck
fish are food for ducks
newts lay eggs under plants
newt eggs
fish
beetles are food for fish
great diving beetle
newt
pondweed provides camouflage for newts
tadpoles are food for beetles
tadpoles
tadpoles are food for dragonfly larvae
dragonfly larvae
algae are food for pond snails
algae are food for tadpoles
mosquito larvae are food for dragonfly larvae
mosquito larvae
algae are food for mosquito larvae
algae

Classification of animals

Animals are classified, or grouped together, with others that have the same features. Look at all the different kinds of animal there are.



jellyfish

coelenterates

myriapods

millipede

centipede

worms

roundworm

flatworm

echinoderms

starfish

sea urchin

molluscs

snail

mussels

octopus

squid

crustaceans

lobster

sea monkey

crab

shrimp

arachnids

spider

scorpion

insects

beetle

fly

bee

butterfly

stick insect

invertebrates

birds

penguin

owl

chicken

duck

mammals

horse

polar bear

human

dog

rabbit

marsupials

duck-billed platypus

koala

kangaroo

lion

cat

elephant

amphibians

toad

newt

frog

reptiles

tortoise

snake

crocodile

fish

shark

clownfish

ray

tuna

vertebrates

Water

Water comes from many sources, including a tap! There is so much of it on Earth that our planet looks blue from space.

blue planet

aqueduct

lake

freshwater

reservoir

flood

stream

river

waterwheel

well

canal

ice cubes

drink

H_2O (water)

irrigation

dam

shadoof

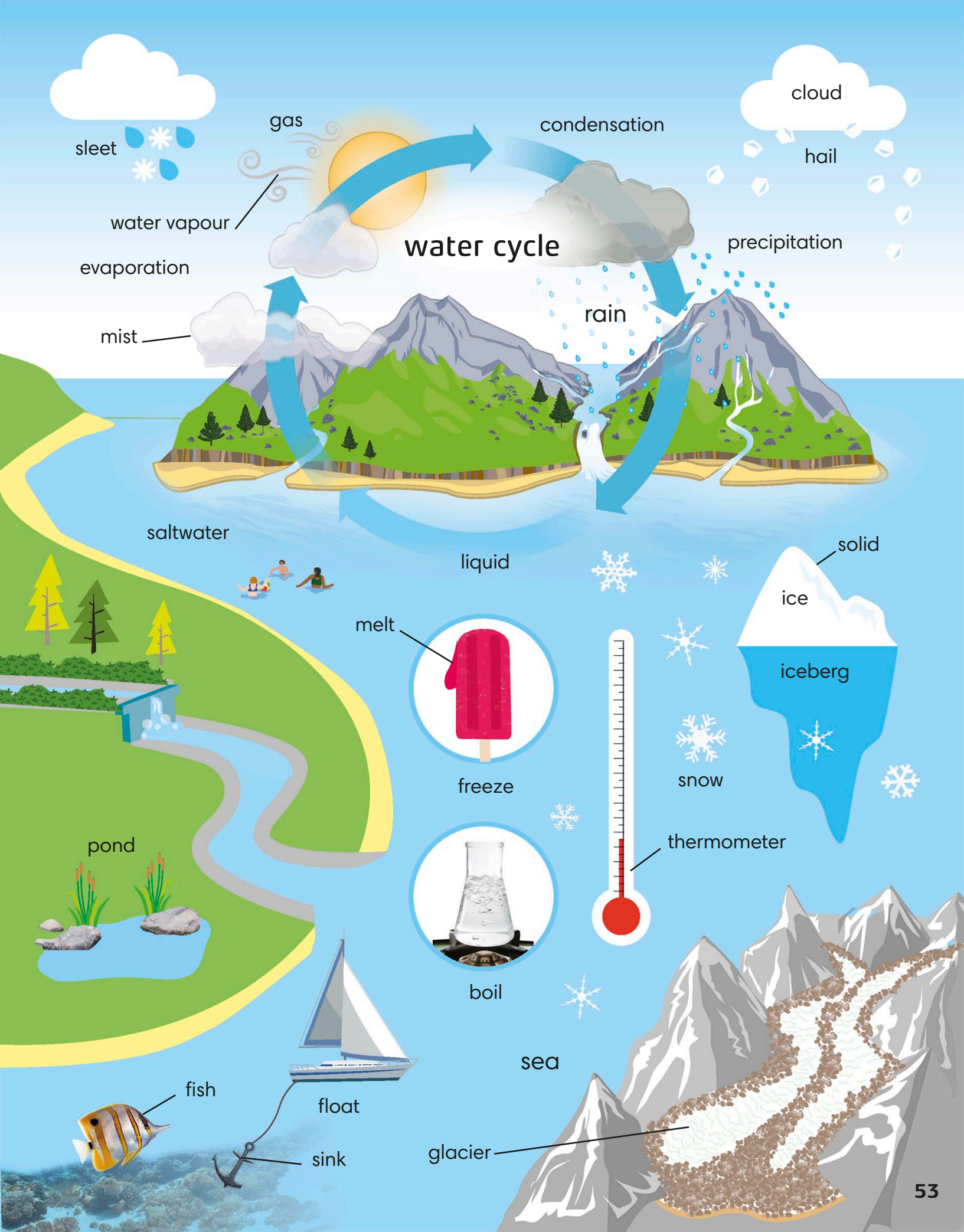
surf

riptide

wave

current

reef

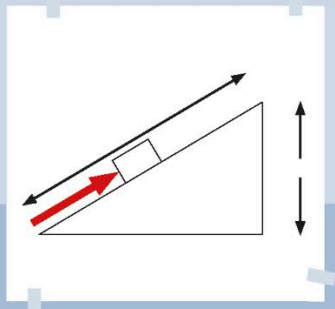

sleet
gas
condensation
cloud
hail
water vapour
water cycle
precipitation
evaporation
rain
mist
saltwater
liquid
solid
ice
melt
iceberg
freeze
snow
pond
thermometer
boil
sea
fish
float
sink
glacier

Experiments

Have you ever wanted to carry out an experiment? Here are some things you might need.

equipment

Newton meter



diagram

microscope

beaker

rock sample

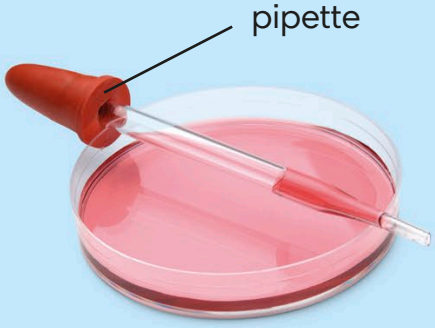
thermometer

tweezers

sound meter

soil sample

scales



pipette

Petri dish

spoon

goggles

idea

magnifying glass

measure

test tubes

measuring cylinder

tuning fork

light meter

battery

wires

motor

experiment

question

method

equipment

prediction

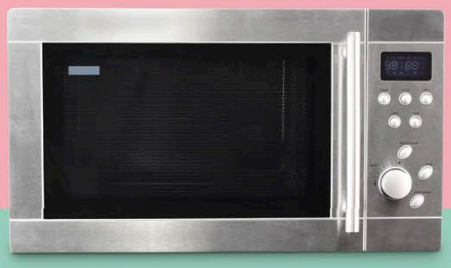
results

graph

conclusion

Mixing and cooking

When you mix ingredients together, or heat them or cool them, you might end up making something new.



microwave

mixer

solid

weighing scales

blender

oven

roast

mould

preserve

pickle

cook

burn

steam

mould

thermometer

raw

timer

coffee maker

fridge

freezer

sieve

whisk

mix

combine

prove

wood-fired oven

bake

smoke

barbeque

charcoal

heat

fire

campfire

Light

We need light in order to see. Light comes from a variety of sources. The source of light we use most is the Sun.


spotlight


candle


light bulb

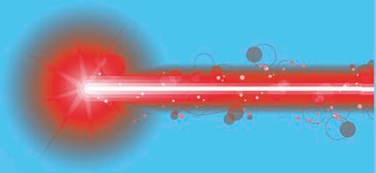
light source


torch


shadow puppet

shadow


lamp

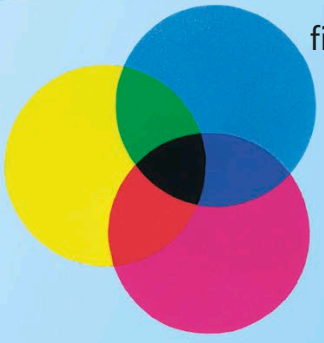

laser

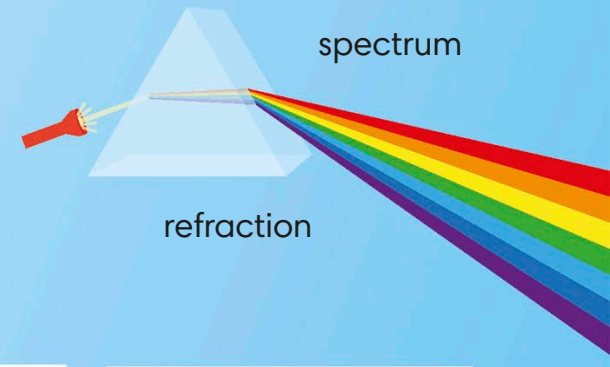

screen


flame

fire

colour

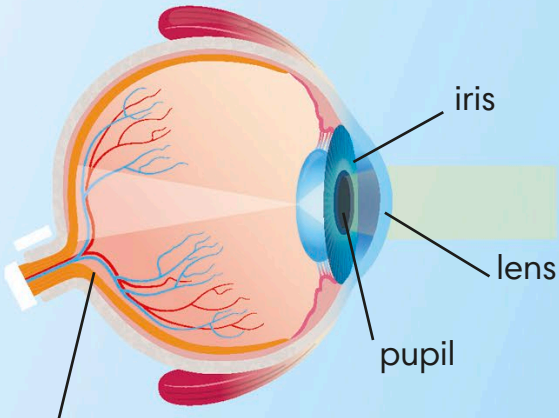

filters


spectrum

refraction

see

eye


iris

lens

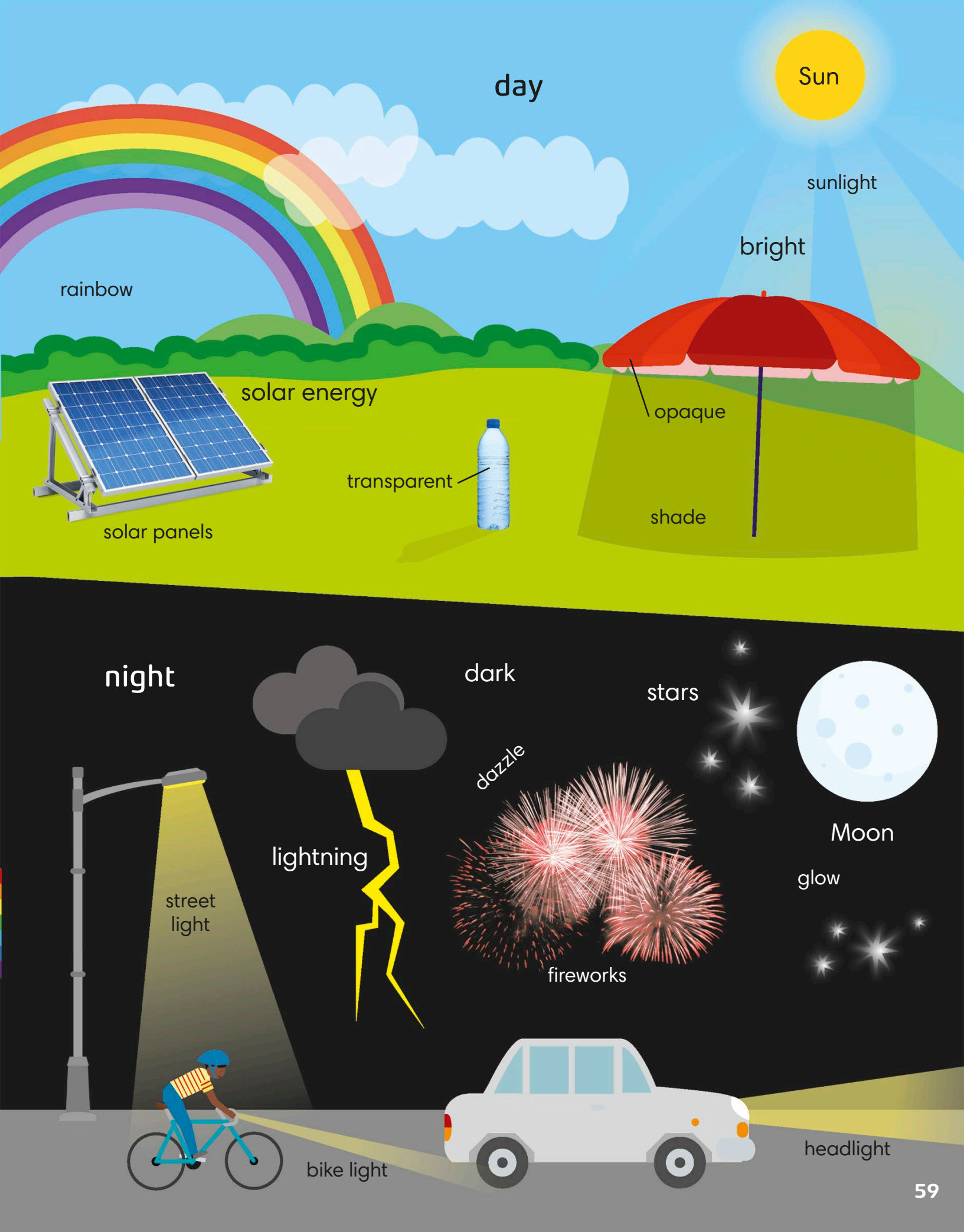
pupil

optic nerve

look

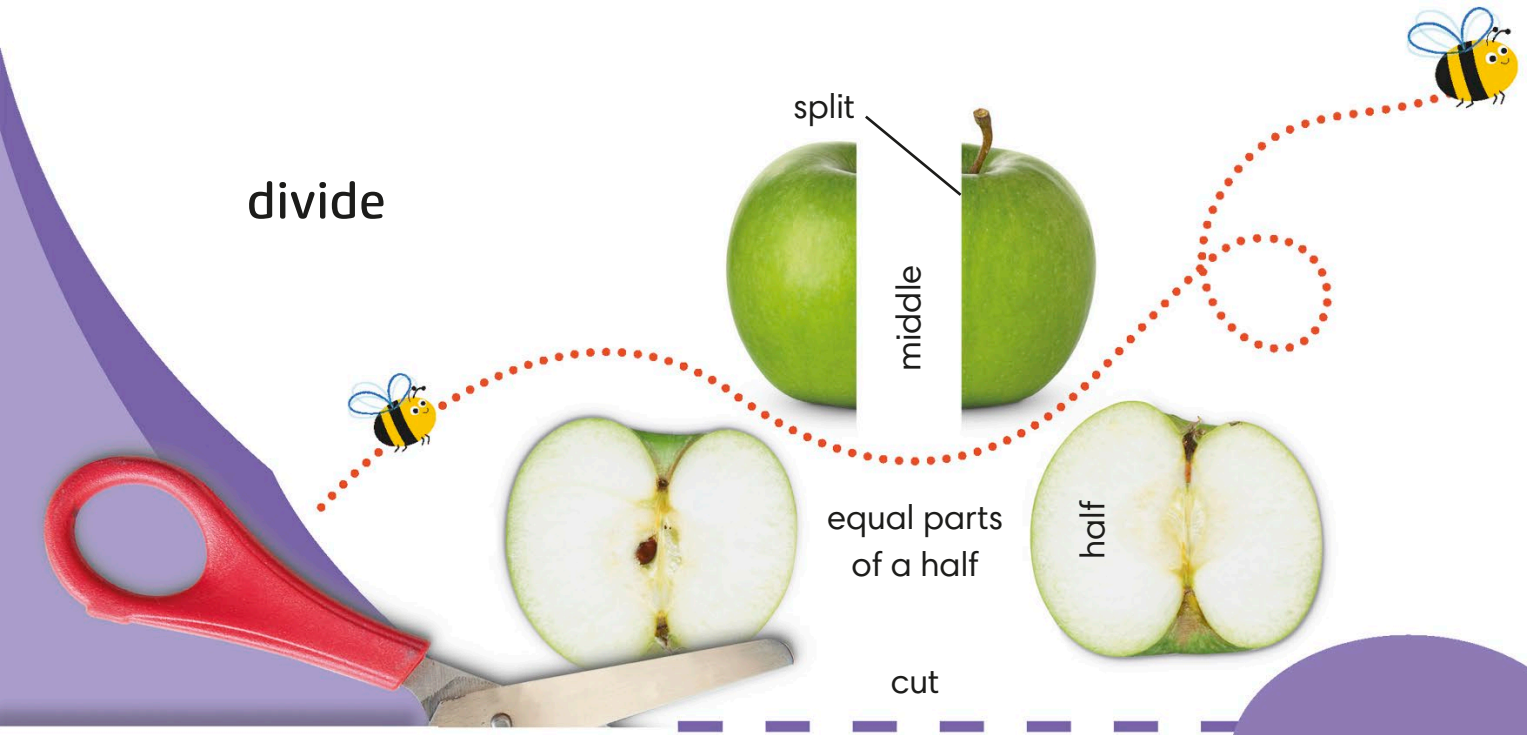

UV light


infrared


day
Sun
sunlight
bright
rainbow
solar energy
solar panels
transparent
opaque
shade
night
dark
stars
Moon
glow
dazzle
lightning
street light
fireworks
bike light
headlight

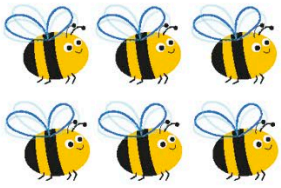
Sharing and grouping

Some things come in pairs or in larger groups. We may need to share them out – one for me and one for you!

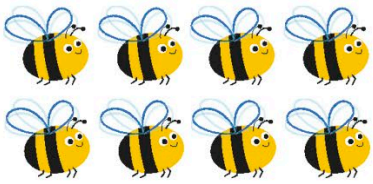


count in twos

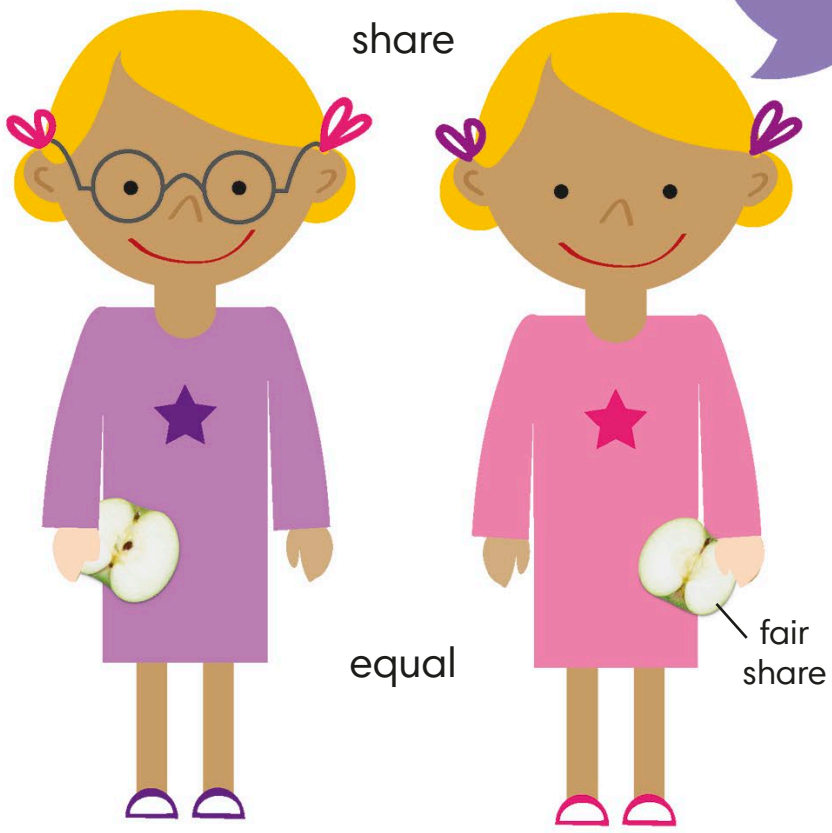
2 lots of 2



2 lots of 3

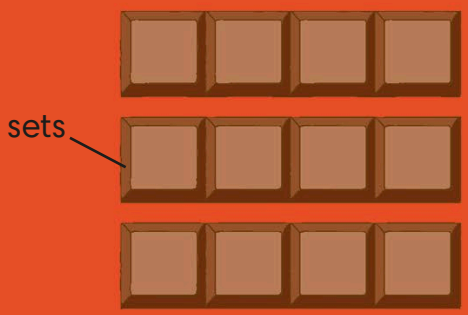


2 lots of 4

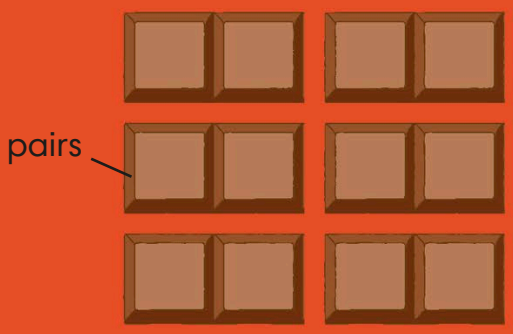


multiply

array

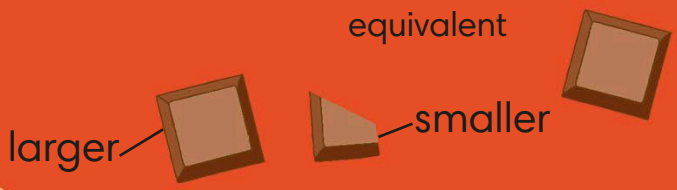


groups



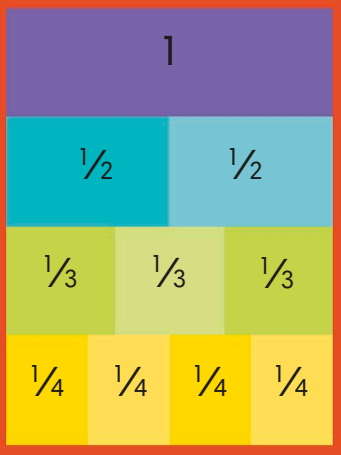
equivalent

fractions



piece

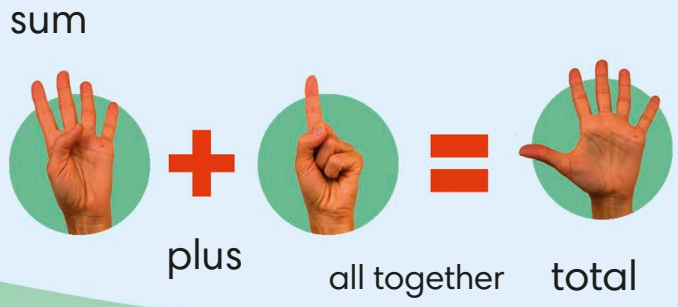
pair



fraction wall

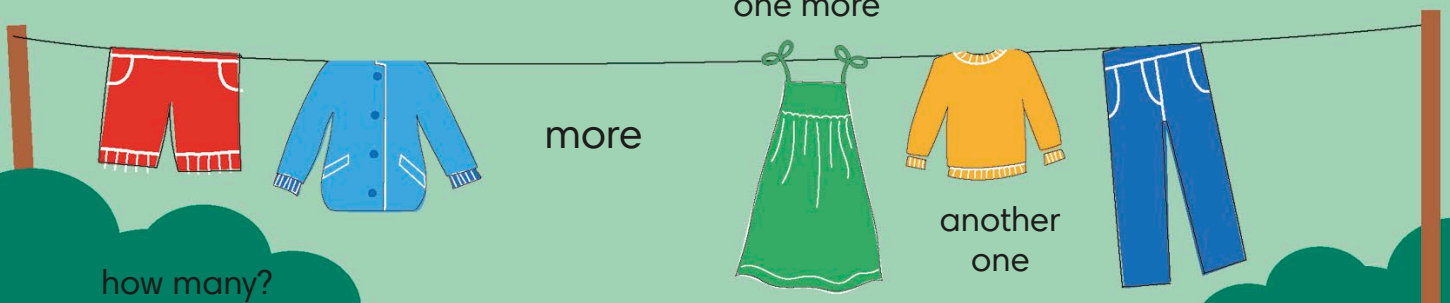
Adding and subtracting

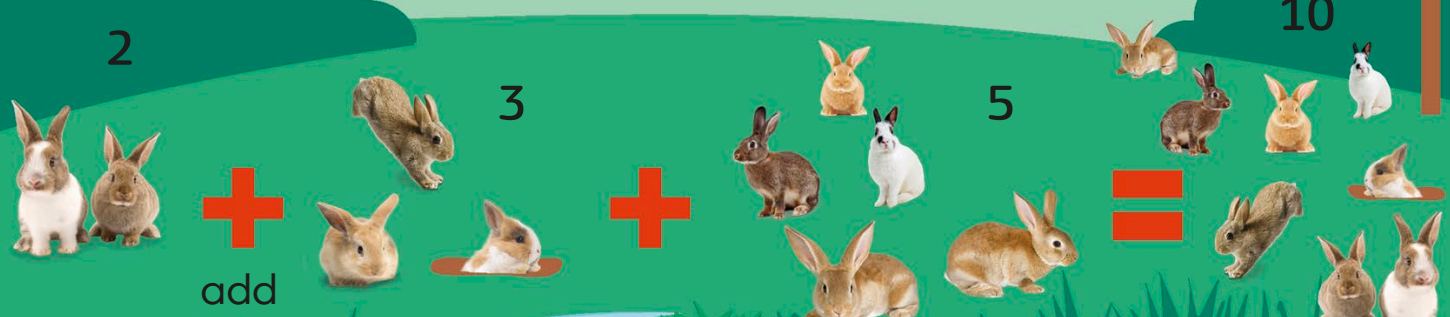
How many do you have? Have some been added or taken away? We need different words to describe how the number of things change.

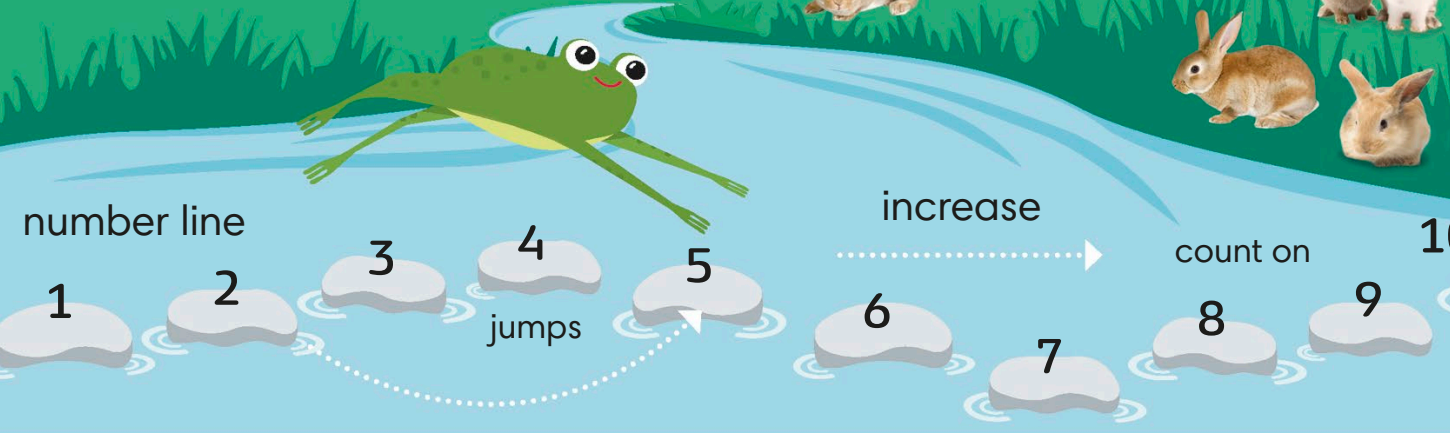


1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	49	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

100 square



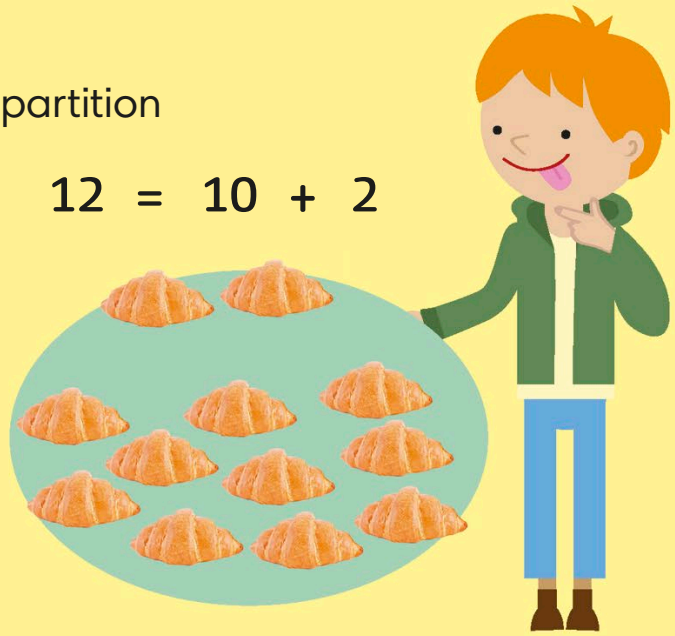


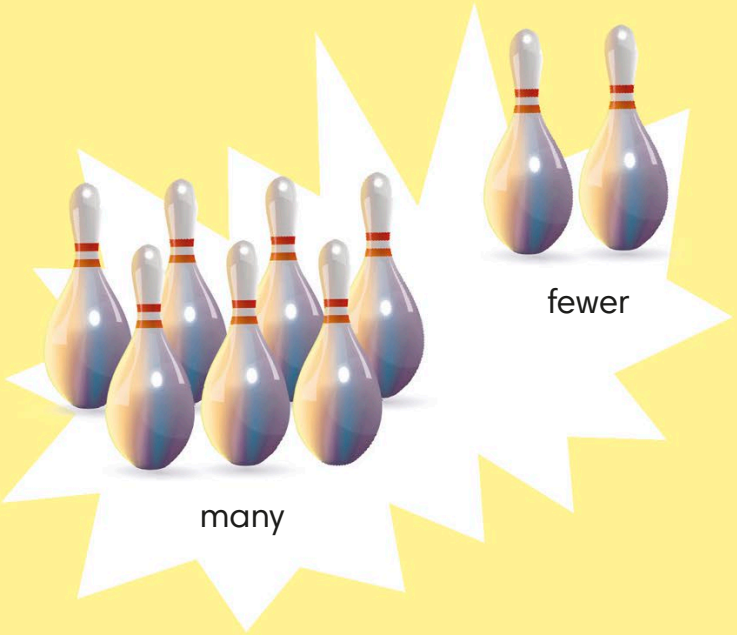


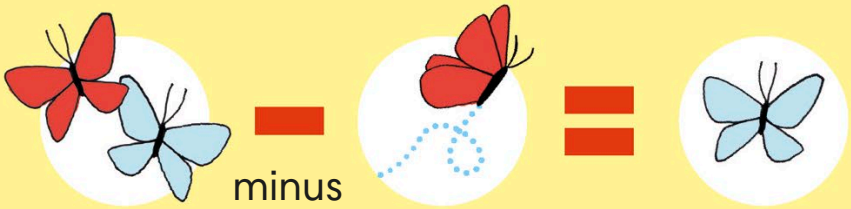
add

partition

12 = 10 + 2







2 1 1

how many?

number

0 1 2 3 4 5 6 7 8 9 10

subtract

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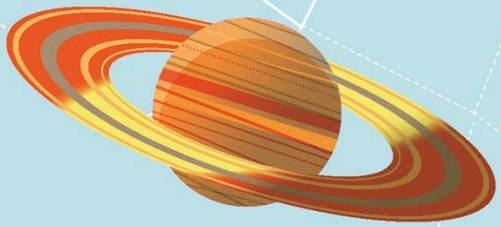

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