

MATHS AND ANIMALS

All Around Maths

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p4 top Tatyana Komtsyan; middle karavai; bottom Depiano; Nicolas Primol; p5 top Inna Ogando; middle Tatyana Komtsyan; bottom left teerawat chitprung; bottom right Chaykovsky Igor; p6 top left Anastasia Lembrik; top right Maltias; middle StockPhotoAstur; bottom Fafarumba, right Faenkova Elena p7 top Maltias; Faenkova Elena, Anna Filpenok 1st middle Maltias; 2nd middle Anna Om; bottom left Maltias; bottom right Tanya Syrytsyna; p8 top gabezi; bottom kulyk; graph fish/MyStocks; cats/Ivan Feokitistov; Marya Kutuzova; dogs/Tatyana Komtsyan; rabbits/Kulikova Valeriya; guinea pig/Anna Pavlyuk; budgie/Maria Stezhko; parrot/PYRAMIS; horse/Maria Stezhko; lizard/Faenkova Elena p10 top Kat_Branch; bottom sebos; p11 grid Elenarts; middle left Kazieva Daria; bottom right Muara; p12 top Wilm Ihlenfeld; middle Yuval Navot; bottom Dneprstock; vetryanaya_o p13 top left shutterstock; top middle Faenkova Elena; top right Faenkova Elena middle left Patryk Kosmider; middle right Chantal de Bruijne; top left Robert Eastman; top right belizar; p14 top left AndreAnita; top right Delmas Lehman; bottom left Komkrich Marom; bottom right Sekar B; bottom border Faenkova Elena; p15 top Mitrushova Tatiana; middle left Anatoliy; middle right David Byron Keener; p16 top Undrey; bottom Ivan Feokitistov p17 top Ivan Feokitistov; bottom left Eric Isselee; bottom right Michael Potterll p18 top left Lorri Kajenna; top right Tatyana Komtsyan; middle left Cat_arch_angel; Muhammad Mahdi Karim Wikimedia Commons; middle right Marco Uliana; bottom FullRix p19 top Tatyana Komtsyan; bottom Undrey; p20 bottom papkin; spiral misibacsi; sphere Geek3; spheroidTomruen, all Wikimedia Commons; p21 top right Photomontage; 1stmiddle right Szasz-Fabian Josef; 2nd middle right Eric Isselee; bottom right Guy j. Sagi; top left Dieter Hawlan; bottom left Kellis; p22 top Nadezhda Shoshina; middle right aapsky; bottom left Nadezhda Shoshina; bottom right Svetlana Foote; p23 top right Viktoria Sevastyanova; middle right Michael Woodruff; bottom left Maria Stezhko; bottom right Maria Stezhko; p24-25 Knumina Studios; p25 clockwise MyStocks; le Panda; nid; Undrey; Panaiotidi; Panaiotidi; Tanya Syrytsyna; Anastasia Lembrik; p26 top Yuliya Somina; bottom Lyudmyla Kharlamova; p27 top Kazakova Maryia; bottom Marya Kutuzova; p28 top wikimedia; bottom from left Yuliya Somina; Marya Kutuzova; IULIA KAZAKOVA; nid; Dneprstock; p29 top Undrey; Noppharat4969; Ramiia Tiugunova; bottom from left Yuliya Somina; Katya Ziobina; Yuliya Somina; backgrounds Tasiana; T-Kot; Vitezslav Valka; Maly Designer; Maciej Es; Inga Linder; Radu Razvan.

Maths is everywhere!
The bodies of all animals
whether they are fish or
bird, or land animal -
all are full of this
amazing science. Maths is
part of the way we grow
and move and feed and
protect ourselves.

Explore the maths that
connects the small dung
beetle to the hunting
cheetah, or the spotted
hyena to the honeybee.

And learn how maths
can help to
protect some
animals from
extinction.





Contents of this book



3

p4-5 In the sky

Wings folding - Gliding at angles
- Feathers - Wings outstretched
Flapping wings - ANGLES

p6-7 Birds on land

Perchers - BALANCE - Runners
- Paddlers - Waders

p8-9 Favourite pets

'Most popular' - BAR CHARTS -
Gathering data - Recording data
- Building a graph

p10-11 Fewer and fewer

Losing animals - The Red List
- SUBTRACTION - Any day now
- Panda problem

p12-13 Matching shapes

Hiding away - PATTERNS -
Points for defence - Lines for
defence - Spheres for defence

p14-15 Long distances

Flight paths - Tracking distance
- Across the world - COMPARE
THE DISTANCE

p16-17 Compare the size

Tallest - Biggest on land -
Strongest - Biggest in the sea
- GREATER, LESS AND EQUAL

p18-19 How fast?

Fastest insect - Fastest bird -
Fastest animal - Horsepower

p20-21 Round homes

Circles as homes - KNOW THE
SHAPES - Holes as homes -
Shells as homes - Woven homes

p22-23 Counting animals

Clever Hans - We can count -
A counting crow - Counting to 5

p24-25 Life in the sea

Deeper and deeper - DIMENSION

p26-27 Sharing time

Life cycles - Butterflies
- Life cycle of a frog

p28-29 Families

Carl Linnaeus - Grouping animals
- SETS - We belong

p30 Animals quiz

What do you know?

p31 Keywords

Useful words for maths ...
... and animals

p32 Index



In the sky

Almost all birds share a most amazing skill - they can fly! They use their wings at special angles to move the air around them, so that it lifts and supports their bodies.



Wings folding

A bird uses feathers as well as strong muscles to fold, or flap, its wings. When a bird's wings flap, they move against the air underneath. This creates thrust that pushes them through the air.



Up ... up ... up ... and ... away!

Gliding at angles

When a bird's wings are stretched out it can glide. It's the angle and shape of the wing that helps it do this. The shape allows air to move faster over the top creating less pressure. More pressure underneath pushes up.

