



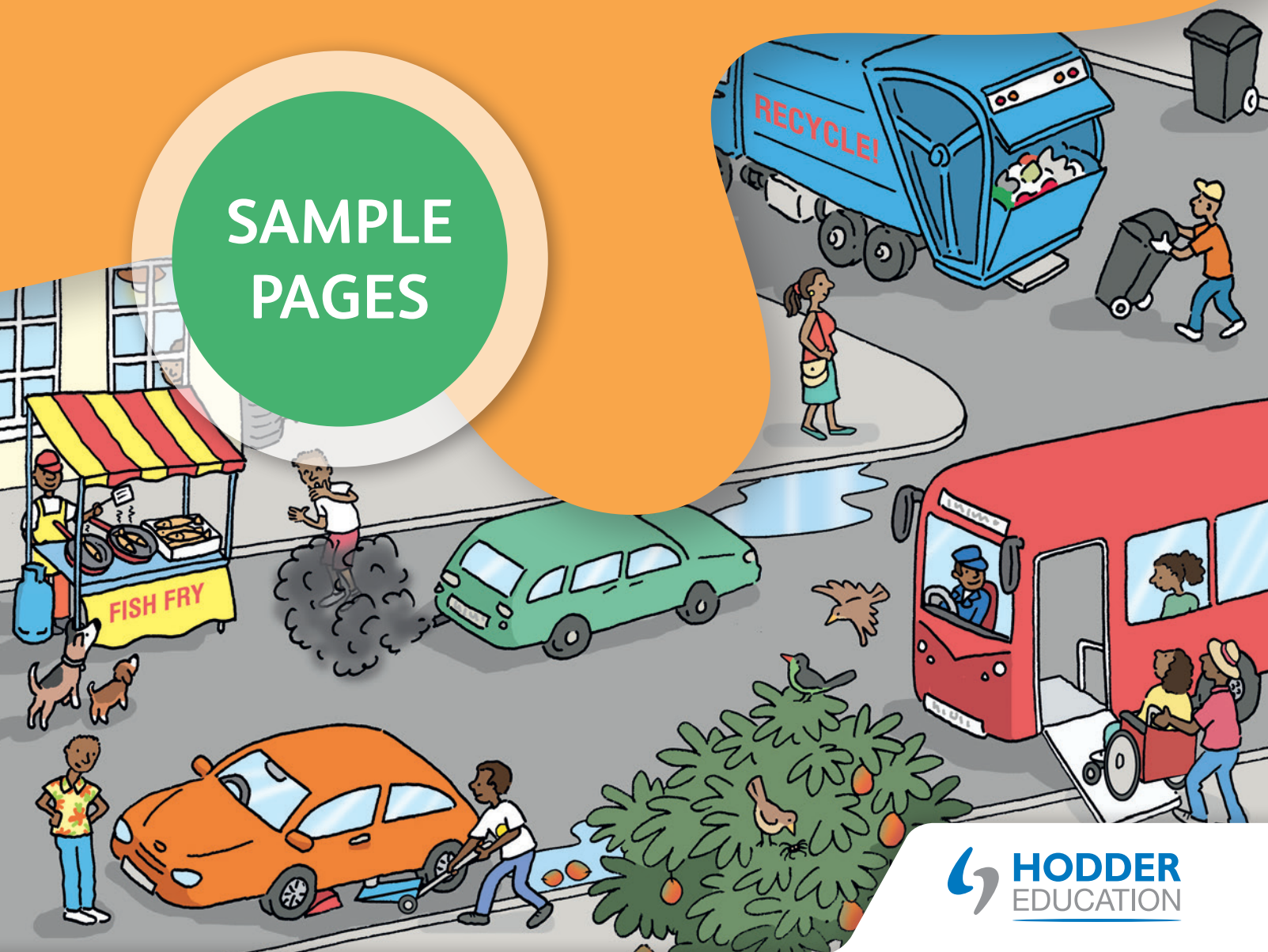
Caribbean Primary Science



Level 5



SAMPLE
PAGES



Every effort has been made to trace all copyright holders, but if any have been inadvertently overlooked, the Publishers will be pleased to make the necessary arrangements at the first opportunity.

Hachette UK's policy is to use papers that are natural, renewable and recyclable products and made from wood grown in well-managed forests and other controlled sources. The logging and manufacturing processes are expected to conform to the environmental regulations of the country of origin.

Orders: please contact Bookpoint Ltd,
130 Park Drive, Milton Park, Abingdon,
Oxon OX14 4SE.
Telephone: +44 (0)1235 827827.
Fax: +44 (0)1235 400401.
Email education@bookpoint.co.uk
Lines are open from 9 a.m. to 5 p.m., Monday to
Saturday, with a 24-hour message answering service.
You can also order through our website:
www.hoddereducation.com

ISBN: 978 1 5104 7896 1

© Cloud Publishing Services, Susan Crumpton,
Lorraine DeAllie, Millie Fullick, Lisa Greenstein,
Sally Knowlman 2020

First published in 2020 by
Hodder Education,
An Hachette UK Company
Carmelite House
50 Victoria Embankment
London EC4Y 0DZ
www.hoddereducation.com

Impression number 10 9 8 7 6 5 4 3 2 1

Year 2024 2023 2022 2021 2020

All rights reserved. Apart from any use permitted under UK copyright law, no part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or held within any information storage and retrieval system, without permission in writing from the publisher or under licence from the Copyright Licensing Agency Limited. Further details of such licences (for reprographic reproduction) may be obtained from the Copyright Licensing Agency Limited, www.cla.co.uk

Main cover illustration by Heather Clarke/D'Avila
Illustration, Seahorse design by Andrew Painter/
D'Avila Illustration

Illustrations by Leo Daly and Magriet Brink, Creative
House; Heidel Dedekind; Claudia Eckard; Natalie
and Tamsin Hinrichsen; Jiggs Snaddon Wood

Typeset in FS Albert by Ashley Richardson

Printed in Slovenia

A catalogue record for this title is available from
the British Library.



The Publishers would like to thank the following for permission to reproduce copyright material.

Acknowledgements

p.13 sourced from <https://1point5.info> © Jonathan Gladding (used with permission); p.36 (b) used with permission from Caroline Power; p.46 (bl & br) adapted from NASA/JPL-Caltech; p.149 replica of map of Caribbean cash crops © Caribbean Atlas, AREC – RICAE.

Photo credits

www.stock.adobe.com: p.7 © ronniechua/stock.adobe.com; p.8 (tl) © ValentinValkov/stock.adobe.com, (tm) © Wojciech Wrzesień/stock.adobe.com, (tr) © Nathan/stock.adobe.com, (bl) © Budimir Jevtic/stock.adobe.com, (br) © Andrey Popov/stock.adobe.com; p.9 (all) © Andrey Popov/stock.adobe.com; p.17 (t) © Debbie Ann Powell/stock.adobe.com; p.18 (t) © poco_bw/stock.adobe.com; p.19 (tl) © peter/stock.adobe.com, (ml) © krivets/stock.adobe.com, (mr) © duke2015/stock.adobe.com; p.20 (t) © Vaceslav Romanov/stock.adobe.com, (br) © Matyas Rehak/stock.adobe.com; p.21 (tl) © emjay smith/stock.adobe.com, (tr) © kwanchaichaiudom/stock.adobe.com; p.22 (br) © Mark Richardson/stock.adobe.com; p.23 (tl) © Winai Tepsuttinun/stock.adobe.com, (tm) © zevana/stock.adobe.com, (tr) © dule964/stock.adobe.com, (bl) © Rattanachat/stock.adobe.com, (br) © Coprid/stock.adobe.com; p.24 (bl) © ghazii/stock.adobe.com, (br) © jassada watt/stock.adobe.com; p.25 (tl) © cat027/stock.adobe.com, (tr) © Andrei Merkulov/stock.adobe.com; p.27 & p.90 (tr) © Семен Саливанчук/stock.adobe.com; p.33 (tl) © Itummy/stock.adobe.com, (tr) © Fevzi/stock.adobe.com, (bl) © phadsanu/stock.adobe.com, (br) © rob245/stock.adobe.com; p.34 (t) © kondratya/stock.adobe.com, (ml) © Kevin Mayer/stock.adobe.com, (m2l) © Scanrail/stock.adobe.com, (m2r) & p.132 (tl) © RTImages/stock.adobe.com, (mr) & p.38 (bl) © arunsri/stock.adobe.com, (bl) © Emilia Stasiak/stock.adobe.com, (b2l) © AVD/stock.adobe.com, (br) © Rawpixel.com/stock.adobe.com; p.35 (tl) © Coprid/stock.adobe.com, (t2r) © viperagp/stock.adobe.com, (tr) © cloud7days/stock.adobe.com; p.38 (ml) © New Africa/stock.adobe.com, (m) & p.138 (tr) © Yong Hian Lim/stock.adobe.com, (mr) © AlenKadir/stock.adobe.com, (bm) © 孤飞的鹤/stock.adobe.com, (br) & p.132 (b2r) © Ruslan Ivantsov/stock.adobe.com; p.40 © Peter Jurik/stock.adobe.com; p.41 & p.46 (br) © Paopano/NASA/stock.adobe.com; p.43 © Ioan Panaite/NASA/stock.adobe.com; p.45 (tl) © blackdiamond67/NASA/stock.adobe.com, (tr) © Dimaz/stock.adobe.com; p.46 (bl) © Peter Jurik/stock.adobe.com; p.49 (b) © dimazel/NASA/stock.adobe.com; p.50 © Daniel Meunier/stock.adobe.com; p.51 (t) © dextorth/stock.adobe.com; p.53 (tl) © Unclesam/stock.adobe.com, (tr) © PhotoSG/stock.adobe.com; p.55 (bl) © JoannaKaczuk/stock.adobe.com, (br) © ajcespedes/stock.adobe.com; p.56 (t) © Downunderphoto/stock.adobe.com; p.61 (t) © Rajita/stock.adobe.com; p.62 (tm) © nosonjai/stock.adobe.com, (tr) © Буктор Мәһмөт/stock.adobe.com; p.63 © Evelyn/stock.adobe.com; p.65 (tl) © Jacquelin/stock.adobe.com, (tm) © dule964/stock.adobe.com, (tr & m2l) © Alessandro Grandini/stock.adobe.com, (m2t) © phichak/stock.adobe.com, (mr) © paulrommer/stock.adobe.com, (m2b) © Yuttana Joe/stock.adobe.com, (bl) © Олександр Лущенко/stock.adobe.com, (br) © lewal2010/stock.adobe.com; p.72 (l) © Gstudio/stock.adobe.com, (tr) © LoweStock/stock.adobe.com; p.73 (b) © giovannig/stock.adobe.com; p.74 (r) © Choo/stock.adobe.com; p.76 (t) © Lucas/stock.adobe.com, (b) © whitcomber/stock.adobe.com; p.77 (m) © subinpumsom/stock.adobe.com, (b) © Lucie/stock.adobe.com; p.78 (bl) © whitcomber/stock.adobe.com, (br) © David A Litman/stock.adobe.com; p.79 (tl) © Fiona/stock.adobe.com, (tr) © John Anderson/stock.adobe.com; p.81 (b) © wildestanimal/stock.adobe.com; p.82 (t) © Innart/stock.adobe.com, (m) © Mazur Travel/stock.adobe.com, (b) © PIPAT/stock.adobe.com; p.84 (tl) © JHVEPhoto/stock.adobe.com, (tr) © Rattanachai/stock.adobe.com, (b) © Dagumimagery/stock.adobe.com; p.86 (tr) © Jamo Images/stock.adobe.com, (b) © Andrea Izzotti/stock.adobe.com; p.89 (b) © celso da silva/EyeEm/stock.adobe.com; p.90 (tl) © Ghost/stock.adobe.com, (b) © Kalyakan/stock.adobe.com; p.91 (tr) © BBandSIRI/stock.adobe.com, (bl) © sara_winter/stock.adobe.com, (br) © urra/stock.adobe.com; p.92 (t) © Dusan Kostic/stock.adobe.com, (m) © Jason Lovell/stock.adobe.com, (b) © 008melisa/stock.adobe.com; p.95 (tl) © Ruud Morijn/stock.adobe.com, (tr) © Marc Xavier/stock.adobe.com, (2tr) © Marcio Isensee e Sá/stock.adobe.com, (2bl) © Sam D' Cruz/stock.adobe.com, (bl) © The Ocean Agency/stock.adobe.com, (br) © whitcomber/stock.adobe.com; p.96 (bl) © Adnan/stock.adobe.com, (br) © Fokke/stock.adobe.com; p.97 (tl) © jbbphotography/stock.adobe.com, (tr) © Pixel-Shot/stock.adobe.com, (bl) © Grispb/stock.adobe.com, (br) © KnoB/stock.adobe.com; p.100 (bl) © anuwat/stock.adobe.com, (br) © corbacerdar/stock.adobe.com; p.106 BillionPhotos.com/stock.adobe.com; p.107 © absent84/stock.adobe.com; p.110 (b) © pokchu/stock.adobe.com; p.111 © AVD/stock.adobe.com; p.115 (bl) © BillionPhotos.com/stock.adobe.com, (b2l) © Petter Berg/stock.adobe.com, (b2r) © EVZ/stock.adobe.com, (br) © zasabe/stock.adobe.com; p.116 (b) © korchemkin/stock.adobe.com; p.117 (t) © picsfive/stock.adobe.com, (b) © JackF/stock.adobe.com; p.118 © David Tran/stock.adobe.com; p.119 (tl) © grey/stock.adobe.com, (tm & tr) © doomu/stock.adobe.com, (ml) © pixelrobot/stock.adobe.com, (mm) © vladstar/stock.adobe.com, (mr) © valery121283/stock.adobe.com; p.120 (tl) © Uros Petrovic/stock.adobe.com, (t2l) © NewFabrika/stock.adobe.com, (t2r) © Ihor/stock.adobe.com, (tr) © Andrej Tokarski/stock.adobe.com, (ml) © exopixel/stock.adobe.com, (m2l) © kuarmungadd/stock.adobe.com, (m2r) © Elena/stock.adobe.com, (mr) © Nomad_Soul/stock.adobe.com, (bl) © yourdisplayads/stock.adobe.com & © anoli/stock.adobe.com, (b2l) © Rick Sargeant/stock.adobe.com, (b2r) © doomu/stock.adobe.com, (br) © hodagmedia/stock.adobe.com; p.126 (tl) © banphoto/stock.adobe.com, (t2l) © exopixel/stock.adobe.com, (tm) © Вячеслав/stock.adobe.com, (t2r) © Nannapatt/stock.adobe.com, (tr) © pioneer111/stock.adobe.com; p.127 (2bl) © Kondor83/stock.adobe.com, (2bm) © Grecaud Paul/stock.adobe.com, (2br) © hcast/stock.adobe.com, (bl) © Sved Oliver/stock.adobe.com, (br) © metr1c/stock.adobe.com; p.131 © Kzenon/stock.adobe.com; p.132 (t2l & t3l) © Africa Studio/stock.adobe.com, (t2r) © Nomad_Soul/stock.adobe.com, (tr) © Coprid/stock.adobe.com, (b) © Konstantin Yuganov/stock.adobe.com; p.135 (tl) © blueringmedia/stock.adobe.com, (tr) © Holly Guerrio/stock.adobe.com; p.136 © igor17/stock.adobe.com; p.137 (t) © nadisja/stock.adobe.com, (m) & p.143 (t2l) © Kris Black/stock.adobe.com; p.138 (tl) © sarawutnam/stock.adobe.com, (t2l) © Iurii Kachkovskiy/stock.adobe.com, (t2r) © jochen wittmann/EyeEm/stock.adobe.com, (bl) © photomelon/stock.adobe.com, (b2r) © eliza/stock.adobe.com, (b2r) © pamelad_mcadams/stock.adobe.com, (br) & p.151 (t) © svdolgov/stock.adobe.com; p.141 (tl) © Liu Lei/stock.adobe.com, (t2l) © picsmart/stock.adobe.com, (t2r, tr & p.151 (m) © New Africa/stock.adobe.com, (ml) © ritaklimenko/stock.adobe.com, (m2l) © natashaphoto/stock.adobe.com, (m2r) © Hyrma/stock.adobe.com, (mr) & p.142 (t2r) © karandaev/stock.adobe.com; p.142 (t2l) © Sergio J Lievano/stock.adobe.com, (tr) © Pako/stock.adobe.com; p.143 (tl) © Svetlana Wall/stock.adobe.com, (t2r), p.146 (r) & p.151 (b) © Bohdan Petrushko/stock.adobe.com, (tr) © nito/stock.adobe.com; p.146 (bl) © JRJfin/stock.adobe.com, (bm) © rcistock/stock.adobe.com; Alamy.com: p.86 (tl) © dbimages/AlamyStockPhoto, p.95 (2br) © National Geographic Image Collection/AlamyStockPhoto; p.148 (tl) © Cultura Creative (RF)/AlamyStockPhoto, (t2l) © Jake Lyell/AlamyStockPhoto, (t2r) © H. Mark Weidman Photography/AlamyStockPhoto, (tr) © Dinodia Photos/AlamyStockPhoto; p.62 (tl) © Lorraine DeAllie; p.36 (b) © Caroline Power Photography; Shutterstock.com: p.17 (b) © kondr.konst/Shutterstock.com; p.18 (br) © Steven J Taylor/Shutterstock.com; p.19 (tr) © Yuri Kravchenko/Shutterstock.com; p.20 (bl) © think4photop/Shutterstock.com; p.34 (b2r) © Konmac/Shutterstock.com; p.35 (t2l) © Pavel Hlystov/Shutterstock.com, (m) © Akhmad Dody Firmansyah/Shutterstock.com; (t) © vinsensiusagung/Shutterstock.com; p.38 (t) © StockSmartStart/Shutterstock.com; p.46 (t) © Everett Collection/Shutterstock.com; p.47 © Castleski/NASA/Shutterstock.com; p.49 (t) © Vera Larina/Shutterstock.com; p.51 (b) © Atjanan Charoensiri/Shutterstock.com; p.74 (l) Ashalatha/Shutterstock.com; p.77 (t) © Supriya07/Shutterstock.com; p.95 (2tl) © klemen cerkovnik/Shutterstock.com; p.101 (both) © Photovolcanica.com/Shutterstock.com; p.108 © Nasky/Shutterstock.com; p.116 (t) © Pinkyone/Shutterstock.com; p.135 (tm) © Sunshine Seeds/Shutterstock.com; p.137 (b) © vectorpouch/Shutterstock.com; Mike van der Wolk (+27 83 268 6000; mike@springhigh.co.za); [all] © Mike van der Wolk (p.6 (both); p.11 (all); p.16 (both); p.18 (bl); p.30 (t); p.61 (b); p.73 (t); p.81 (t); p.89 (t); p.99; p.142 (tl); p.145.

Contents

How to use this book	iv
Topic 1 Being a scientist	2
Topic 2 Weather	6
A Weather	8
B Climate	10
C Climate change	13
Topic 2 Review	15
Topic 3 Earth's resources	16
A Soil	18
B Air	22
C Water	28
D Dealing with waste	32
Topic 3 Review	39
Topic 4 The solar system	40
A Conditions for life	42
B Vehicles in space	45
Topic 4 Review	49
Topic 5 Plants	50
A Plants and pollination	52
B From flowers to fruits	55
C Transport in plants	57
Topic 5 Review	59
Topic 6 Animals	60
A Reproduction in animals	62
B Body systems	66
C Medical technology	72
Topic 6 Review	75
Topic 7 Ecosystems	76
A Relationships in ecosystems	78
B Populations	83
C Pollution and conservation ..	88
D Ecosystems change	94
E Earthquakes and volcanoes	100
Topic 7 Review	105
Topic 8 Energy	106
A Electrical circuits	108
B Safety first	112
Topic 8 Review	115
Topic 9 Forces, motion and structures	116
A Forces	118
B Simple machines	125
C Levers	128
D Strengthening materials	132
Topic 9 Review	135
Topic 10 Matter and materials	136
A Changing materials	138
B Reversible changes of state	140
C Irreversible changes of state	143
D Production processes	147
Topic 10 Review	151
Test yourself	152

Being a scientist

Last year you learnt a number of different skills. You will use these skills again this year and you will also learn more about making predictions and hypotheses, choosing which approach to use in an investigation and carrying out fair tests.

- 1 Read this poster that some students made to describe what scientists do.
 - a Give an example of when you have done each of these things.
 - b Write down one good question that you could ask about the weather conditions outside today.

Making predictions

When you say what you think will happen in the future, you are making a prediction. When you predict, you ask yourself: 'What will happen if ...?'

To answer the question, you use the information that you have and scientific facts that you know to make a sensible prediction. A prediction is not just a guess.

Weather forecasts are a prediction of what the weather will be like. Scientists who predict weather use maps, charts and other data to work out what they think is likely to happen.

- 2 Read the weather forecast opposite.
 - a Which day of the week is predicted to be hottest?
 - b Is rainfall predicted for the week? If so, when?
 - c Why do you think the report says 'current predictions suggest'?

What scientists do

- observe, think and ask questions
- make predictions
- investigate/experiment to find answers
- record observations and results using tables, graphs and diagrams
- analyse their results carefully
- support their findings with evidence

WEATHER FORECAST

For Bequia in the coming week, the average daytime maximum temperature is predicted to be around 28 °C, with a high for the week of 29 °C expected on Saturday afternoon.

The average minimum temperature is predicted to be 25 °C, dipping to its lowest on Wednesday morning at 21 °C.

Expect the week ahead to have mixed weather with some days dry and some seeing a little rain. Current predictions suggest Wednesday will have the most rain with about 3 mm expected.

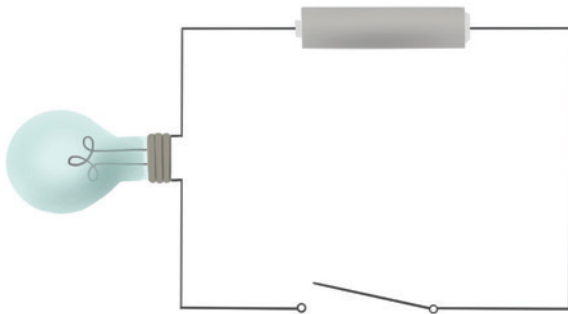
- 3 Find a weather prediction for your area for the next three days.
 - a What weather is predicted for the next three days? List the conditions in your book.
 - b Keep track of the actual weather over the next three days. Evaluate the accuracy of the prediction.
- 4 Look at the equipment in the diagrams and read the questions.
 - a Predict what is likely to happen in each case. Write down your predictions.



What will happen if I put the stones in the water?



What will happen if I put one seedling in a dark cupboard?



What will happen if I close the switch?



What will happen if I put the magnet close to each object?

- b Tell your partner what information or scientific facts you used to make your predictions.
- c For each example, write down how you could test whether your prediction was accurate.

Make a hypothesis

A hypothesis is a general statement that outlines what you think the results of the investigation will be. You can think of a hypothesis as your theory.

A good hypothesis is written as a statement that can be tested. That means you can do an experiment or investigation to observe or measure what happens and use the results to decide whether your hypothesis is correct or not.

It is useful to write your hypothesis in the form of an if then ... statement (but not all hypotheses are in this form).

1 Read these two hypotheses.

If an ice cube is placed on the windowsill in the sun it will completely melt by the end of the lesson.

If you drop a stone it will fall towards the ground.

- a Suggest what question the scientists might have asked before they made each hypothesis.
- b How could you test these hypotheses? For each one say what you would observe or measure.

2 Read these questions and write a hypothesis that can be tested for each one.

- * Is brown paper stronger or weaker than newspaper?
- * What happens if you bury biodegradable plastic in the ground?
- * What happens to the temperature of the water if you mix hot and cold water?
- * Does the wind direction affect whether it will rain or not?
- * Does the amount of sleep you get affect how well you do in tests?

3 Marisol noticed that when the wind was blowing from the north it was often cooler than on other days.

- a What is Marisol's observation?
- b What questions could she ask based on this observation?
- c Write a hypothesis for one of the questions.
- d How could this hypothesis be tested?

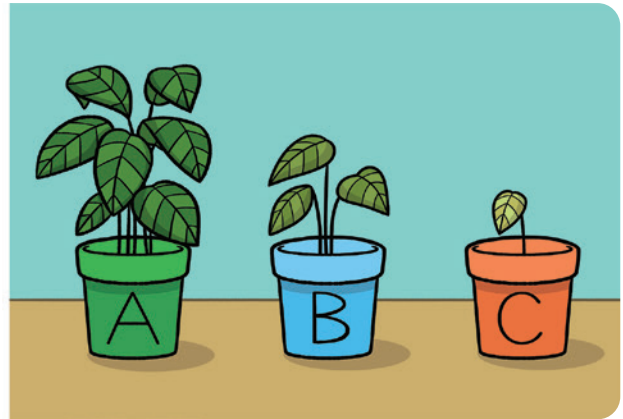
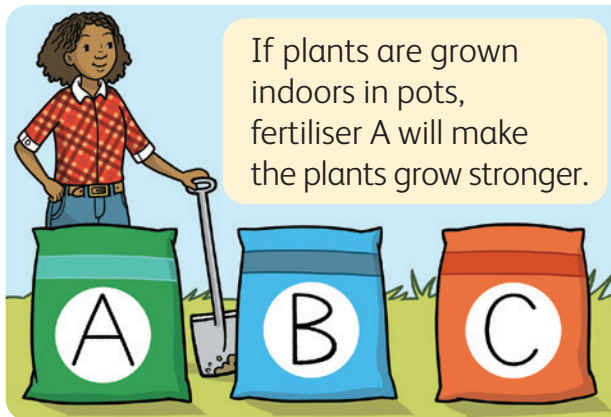
4 Marcus does the dishes and he notices that his dad's coffee mug often has some sugar stuck on the bottom of it, but no one else's mug has any.

- a What questions could Marcus ask about this observation?
- b Marcus makes this hypothesis: 'If you add more than three teaspoons of sugar to your coffee, it will not all dissolve and you will get sugar left on the bottom'. How could he test this?

Choosing a method of investigation

There are different types of scientific investigations. For example, you can make observations, look for patterns, identify and classify items, plan and carry out a fair test or do research as part of your investigation. When you decide to do an investigation, you have to choose the method that is most suited to what you are trying to find out.

- 1 Read Nina's hypothesis and look at her results.



- a What sort of investigation do you think Nina did? Why?
- b Do the results support her hypothesis?

- 2 This is one group's plan for an investigation.

Our question: Can a plant survive without water?

What will stay the same?

We'll use two identical plants in the same sized pots with the same type of soil.

We'll put both plants in the same place where there is some light.

What will change?

We will water one plant every two days and we will not water the other one at all.

- a Are these students planning a fair test?
- b Predict what will happen to the plants.
- c What will the students use as evidence to support their results?
- d How long do you think their investigation will take? Why?

Caribbean Primary Science

SAMPLE PAGES

Open up the world of science to your students, enthusing and encouraging them to become focused, questioning and successful scientists, thinkers and problem solvers.

Science and technology encompass some of the most important skills children need to master in the modern world. This series introduces and develops the building blocks of science study, ensuring student interest and academic progression continue hand-in-hand throughout primary school and on into secondary education.

- A new and appealing resource, planned and designed to make each student feel and work like a scientist.
- Language controlled with vocabulary support for students, plus full support for non-specialist teachers.
- Features special projects and research projects to build skills towards the end-of-primary examinations.
- Focus on practical work, green technologies, environmental issues and science in daily life.



Look!

The picture on the front of this book shows a busy street with lots of activity. You can use the picture to introduce science concepts and vocabulary and make links with the children's daily lives. Encourage the children to love science throughout their school life.

Look at what is going on in the picture. You will find examples of garbage disposal, evidence of weather patterns, examples of pollution, examples of ecosystems and food sources, examples of levers and wedges being used, and much more.

HODDER EDUCATION

e: education@bookpoint.co.uk

w: hoddereducation.com

ISBN 978-1-5104-7896-1

