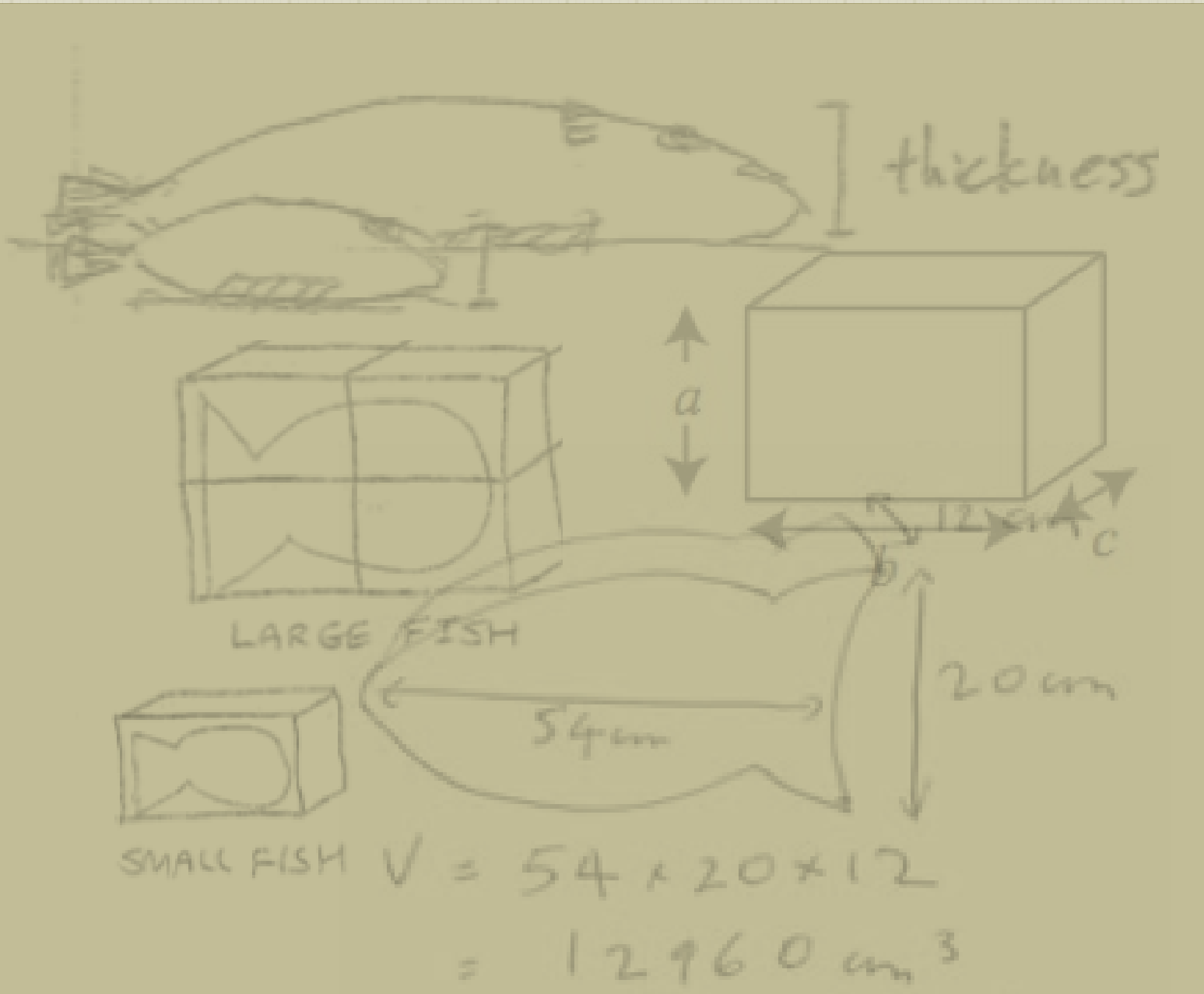
Volume and Space

STUDENT BOOKLET



By Caroline Yoon, Peter Radonich and Nikki Sullivan

3 The LEMMA series:
Learning Encounters with
Meta-Mathematical Activities

NZCER
NEW ZEALAND COUNCIL FOR
EDUCATIONAL RESEARCH

NZCER Press
New Zealand Council for Educational Research
PO Box 3237
Wellington
New Zealand

© Caroline Yoon, Peter Radonich and Nikki Sullivan, 2016

ISBN 978-1-927231-88-3

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A catalogue record for this book is available from the National Library of New Zealand

Designed by Cluster Creative, Wellington

Printed by About Print, Wellington

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Warm up task

Many marine organisms grow proportionally

The baby seahorse is a miniature version of his father.

Humans do not grow proportionally. A baby human has shorter legs and arms compared to their head, whereas an adult human has longer legs and arms compared to their head.

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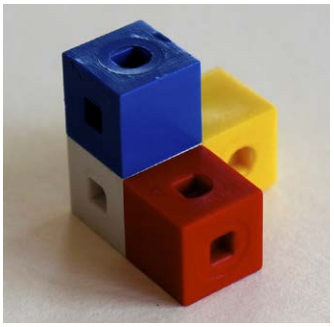
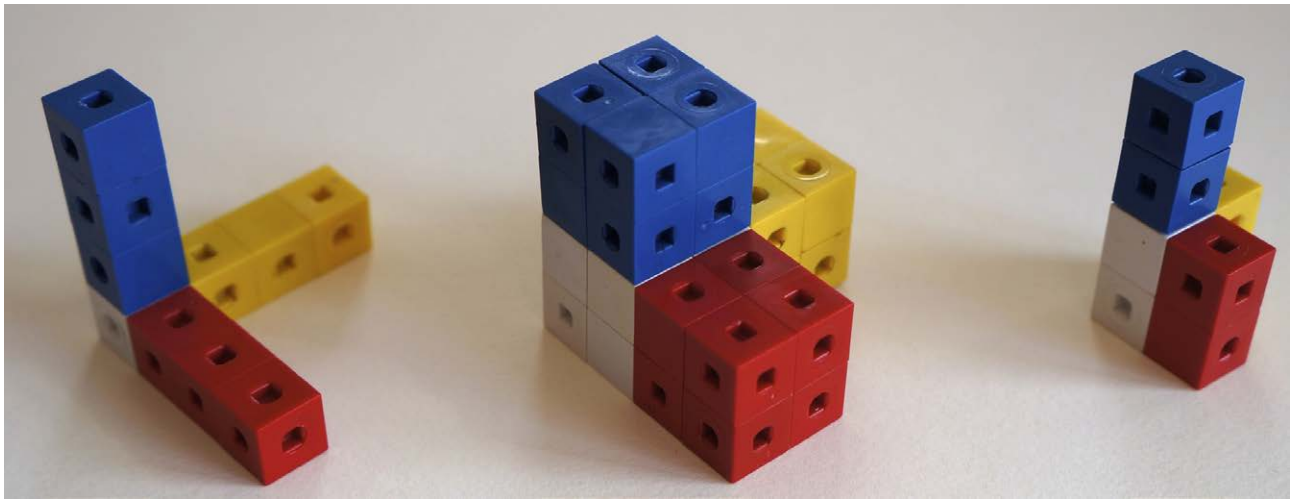
This is Squidley:

Squidley lives in the sea, and like many other marine animals, he grows proportionally.

When he grows up he will be twice as big as he is now.



1. What will Squidley look like? Choose one option from (a), (b) and (c).



(a) (b) (c)

2. Option (c) has twice as many cubes as young Squidley, but there's something not quite right. What is it?

3. Option (b) looks proportional to young Squidley, but it isn't twice as big. How many cubes are there in (b)? How many in the young Squidley?

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Task 1: The snapper problem

The Lovrich family and the Borich family went fishing together. They caught nine Snapper. Zoe Borich caught the biggest one, which was 54 cm long.

Joe Borich took the job of dividing the fish up fairly between the two families so that they had the same amount of fish each. He gave himself the big snapper as his daughter Zoe caught it, and said that it was worth two of the smaller fish (27 cm each). Peter Lovrich thought that the flesh from the big fish was probably worth more but decided not to say anything to avoid a scene.

Peter needs your help!

Your job is to work out a mathematical argument for deciding how many little fish the big fish is worth. **Write a letter** to Peter, describing your mathematical argument clearly. Using a diagram might help. Peter wants to be able to use your argument for future fishing trips, so explain in your letter how he can make your argument work for fish of any size.

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