

**Drop
Them Both!**



Max sits on a hill, holding a rock and a soft white feather. 'I will drop them both,' he says. 'The rock will hit the grass **before** the feather.' But does it have a lot **more** mass, or just a bit?





The rock is **dark**, **solid**, and **sharp**. Even the strong grip of the elephant can not chip it. In the harsh sun, the rock is **hard**, just as strong as **before**. Try biting one. No. Do not do that.

'A rock is a lot like an elephant,' says Max.

'Both are hard to move.'

Max shoves hard at the elephant with both arms. He shoves and shoves, but the elephant does not budge at all. 'It wins,' Max puffs.





The elephant walks off. Max holds up the rock and the feather. The rock pulls his arm, but the soft feather would drift off in a gust. 'One of you is a grumpy lump,' Max says.

Max lifts the rock and gazes hard at it. That dark stone has a secret mass locked inside. 'What is your mass?' he asks. 'Five? Ten? **Forty?**' The rock says nothing. You can not tell the mass just by picking it up. Max must get help.





'Dad!' Max yells. 'I must find the mass of this rock!' Dad comes up the drive with his scale and a big grin. 'A scale is just the thing for this job!' he says. At last they can find the mass.

Dad holds up a flask of water. 'This flask, full to the top, is one,' he says. 'One flask, one mass.' He marks it on his chart with a grin.



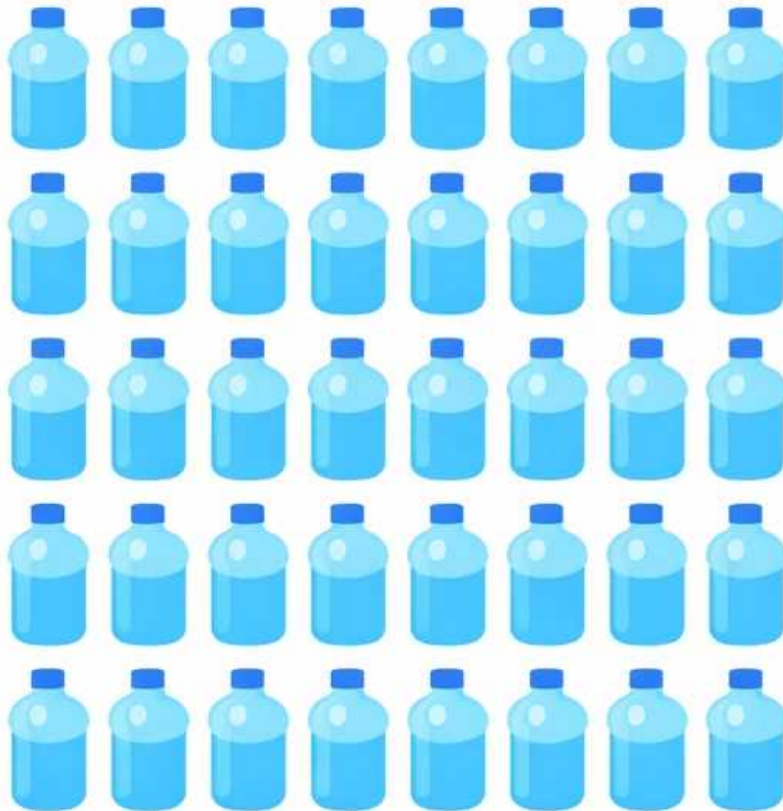


'Dad, does more of something give more mass?' Max asks. 'Not at all!' says Dad. 'Ten cattle on this side of a large scale. Two hundred dogs on that side. Which side falls?' 'The dogs!' says Max. 'Wrong!' says Dad. 'The cattle win. It is not the sum that sets mass. It is what is packed inside.'

Max looks at the hills,
the sky, the vast planet
under him. 'Can we find
the mass of the planet?'
he asks. Dad smiles.
'No scale is that **large**.
But maths can find it.'
Max blinks. Maths can
find the mass of it all?



'The mass of this planet is the same as jugs and jugs of water,' says Dad. '**More** jugs than we can count!' Max can not take it all in. The sum is so big it can not fit on one **chart**.



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'Can my feather match the flask?' Max asks. They pile up feathers until the stack rises far past the top of the scale. Then both pans sit still. The same mass. But one side is huge and one side is tiny.



The background of the slide is a teal gradient. On the left side, there are stylized white and light blue clouds. Several blue raindrops of varying sizes are falling from the clouds. The text is positioned on the right side of the slide.

Small drops **start** to fall
from the sky. One lands on
Max's **arm**, so tiny he can
hardly feel it. 'But **more**
and **more** drops **form** a
large dark pond,' he says.
Tiny things add up. Even a
soft thing has mass.

Max gets on the scale.
He is not as big as an
elephant, but not as
small as a melon. He sits
with the rock and the
feather beside him, just
like **before** on the hill.
'One, two, drop!' he says.
Which one do you think
lands last? Go and try it!





Drop Them Both!

A boy sits on a hill with a rock and a feather, ready to drop them both. He is sure the rock will hit the ground first, but he needs to know how much more mass it really has. Can his dad help him find the answer before the drop? Created to align with the UFLI Foundations scope and sequence (Lesson 79: ar /ar/ & or, ore /or/ Review), this book practises words like 'hard', 'dark', 'chart', 'sharp', 'start'.

Phonics Focus: ar & or, ore Review

are, arm, arms, before, chart, dark, far, for, form, forty, hard, hardly, harsh, large, marks, more, or, sharp, start

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