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Released back into the wild: Page 2

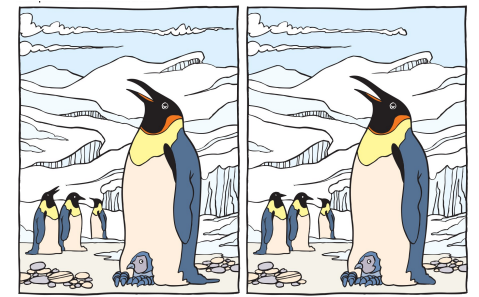


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Can you spot the difference? Page 2



SANDCASTLE SCIENTISTS



Share projects inspired by *The Wonder Weekly* with us. Email: UnderwoodCentre.Enquiries@utas.edu.au

Pictures: iStock/ Nadezhda1906/ Nicola Branson

AS summer approaches in Tasmania, families will be heading to the beach to swim, surf and have fun on the sand.

And what could be more fun than building a sandcastle.

Of course, the perfect sandcastle requires the perfect sand.

The sand closest to the water is too wet to build with and collapses, while the sand farthest away from the water is too dry to hold a shape.

So what is the perfect moisture content to build a sandcastle?

Scientists from Iran, The Netherlands and France collaborated in research to answer this very question.

Maryam Pakpour, Mehdi Habibi, Peder Moller and Daniel Bonn

discovered that sand with a water volume of just 1 per cent was required to build the tallest sandcastle possible.

The results were published in the science journal [Nature](#).

The study involved testing different levels of sand wetness and building higher and higher columns of sand.

At one part water to 99 parts sand, the scientists were able to build columns five metres high.

Now that would be an impressive sandcastle!

A small amount of liquid forms bridges between grains of sand, linking them together to allow the creation of structures such as sandcastles.

This is because of a force known



as 'surface tension', which causes water molecules to attract.

Fill a glass to the brim with water, and you will notice a dome forms - the water miraculously rises above the edges of the glass.

This is surface tension in action.

A plastic bucket and spade are handy tools, but using your hands is the best method for constructing a sandcastle.

Compacting sand with your hands shortens the 'water bridges' between the grains and

leads to a sturdier castle.

Perhaps before heading to the beach you might like to draw a site plan for your castle.

A site plan will provide a birds-eye view of your castle, and allow you to maximise your time when you arrive at the beach.

Include walls, towers, moats and definitely a draw bridge.

As well as sand you could use other items on the beach to construct and decorate your castle.

Shells, small pebbles, seaweed,

a small stick for a flag pole, the options are endless.

But remember, a sandcastle only lasts until the next high tide.

Ask an adult family member to take a photo of your castle so you have a record of it to keep.

We would love to see examples, if you would like to send the photos through to us.

Don't forget to wear a hat and smother any bare skin with sunscreen.

And always keep well clear of any shorebirds while at the beach.

Children's University Tasmania members can earn stamps in their passports for this challenge, at the discretion of their school coordinator.

Back in wild waters

Helping hand for Tasmania's rare, curious little fish



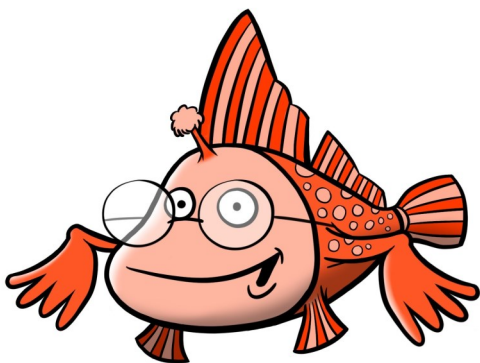
DOING WELL: One of the 42 juvenile red handfish raised in captivity, sighted days after being released back into the wild by scientists.

Picture: Dr Jemina Stuart-Smith

REGULAR readers of *The Wonder Weekly* will know all about our love for the critically endangered red handfish.

Our publisher, the Peter Underwood Centre, has sponsored one of the small number of red handfish still living in the wild.

This sponsorship will help scientists at the Institute for Marine and Antarctic Studies, at the University of Tasmania, and the CSIRO, and others working to save the red handfish, spotted handfish and Ziebell's handfish.



All three species are only known to exist in waters off southern Tasmania, and are among the rarest fish on the planet.

Research revealed there were fewer than 100 surviving red handfish in two areas near Hobart.

In response, the scientists established a database of each individual to track their movements.

You might remember we ran a competition for our readers to help name our fish, and could not go past the entry by Arlo

Burns, who suggested the name 'Digit'.

The Wonder Weekly mascot, Professor Finn, is a red handfish.

Last week, 42 juvenile red handfish hatched and raised

from eggs at IMAS, at the University of Tasmania, CSIRO and Seahorse World were released back into the wild.

IMAS and CSIRO lead researcher Dr Jemina Stuart-Smith said raising the baby

handfish in captivity was designed to improve their chances of surviving to maturity.

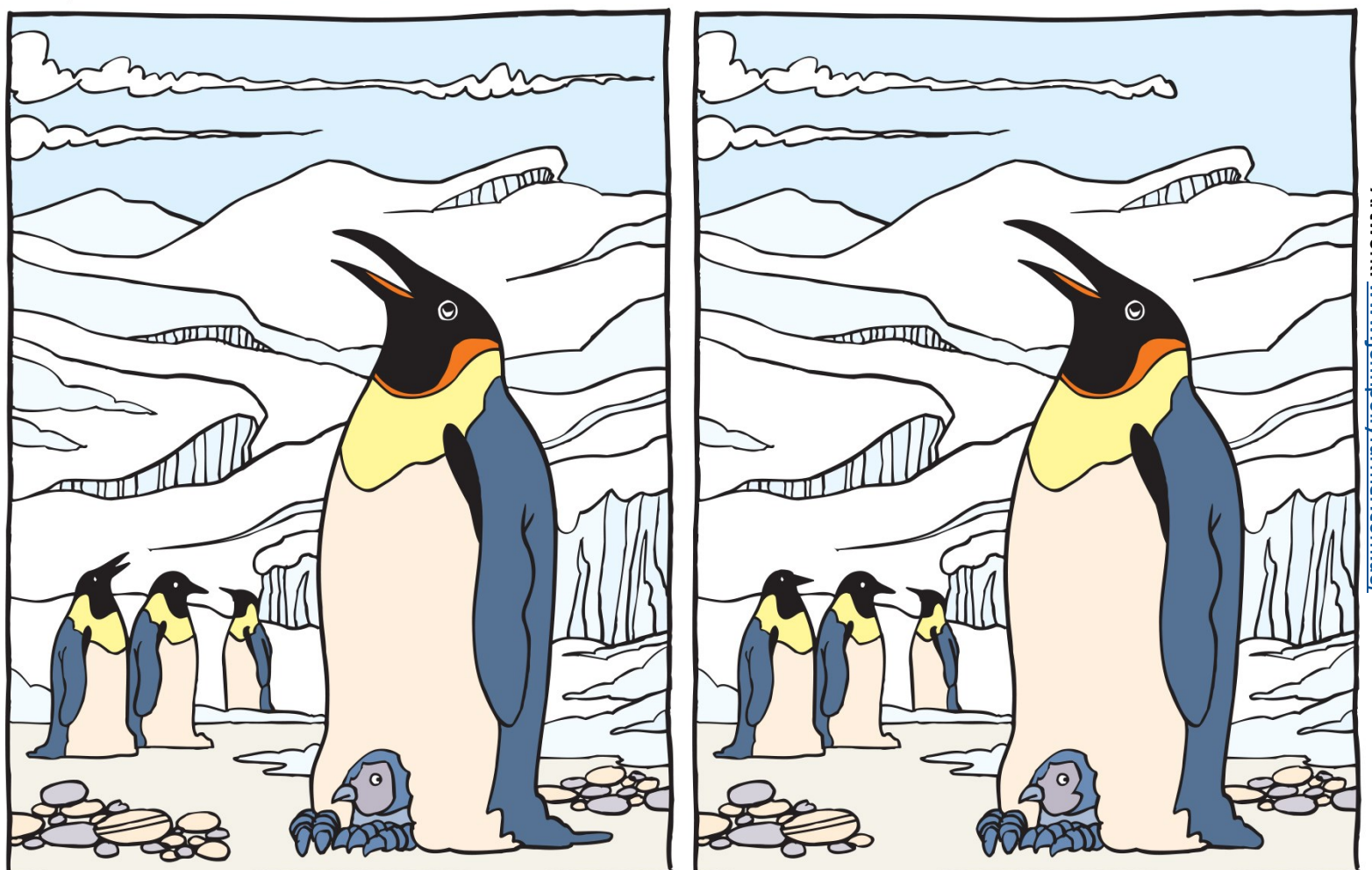
"While the juvenile handfish grew in aquariums, IMAS worked with the Tasmanian Commercial Divers Association to improve

their habitat for release by harvesting urchins at handfish sites, which allowed the seaweed to start to grow back," Dr Stuart-Smith said.

You can find out more here: handfish.org.au

SPOT THE DIFFERENCE

There are eight small differences between the first cool king penguin picture and the second one. See if you can spot them. The solution is below.



SOLUTION: 1. Cloud changed, 2. Ice at left changed, 3. Rocks at front missing, 4. Front penguin's beak longer, 5. Shape of penguin chick's face changed, 6. Front penguin's tail shorter, 7. Left hand penguin's beak closed.

Artwork: www.johnpollifarmer.com.au/