

Welcome to the SCIENCE 2025 Activity Book!

Get ready for a jam-packed adventure, full of awesome activities, cool experiments, fun facts, and creative challenges that bring Science, Technology, Engineering, Arts, and Maths (STEAM) to life! Whether you're into experiments, drawing, construction or history, there's something for everyone to enjoy.

So, grab your pencils, put on your thinking cap, and let's explore, create, and discover together - because science is all about having fun and asking why?

Let's get started!

To find out more visit:

www.science03.org

If you have any questions about our science festival or would like to get in touch, then email festival@science03.org, we'd love to hear from you!



S国CRET SYMBOLS

Throughout the pages of this activity book we have hidden...



8 Orcas





6 Puffins



→ **5** Lighthouses



4 Surfers



3 Wind Turbines



2 Seals

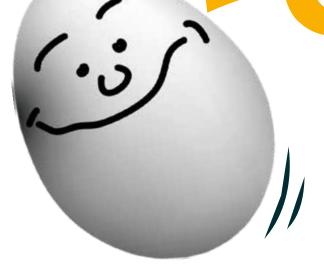


<1 Mountain

CAN YOU FIND THEM ALL? COLOUR THEM IN AS YOU DO!

CAITHNESS CROSSWORD How well do you and your Down: family know Caithness? 1. Located in Wick, this is the shortest street in the world. (8,5) Have a go at our crossword to test 2. The black and white "Scorries" whose home is your knowledge! Harmsworth Park. (4,7) Across: 4. Caithness dialect name for the Lapwing bird. (7) 3. Village named after a Dutch 5. Name of the offshore windfarm lying east of ferryman. (4,1,6) Wick. (8) 7. Caithness dialect name for the 6. The lucky cowrie shell found on Caithness Blackbird. (9) beaches. (7,6) 8. The water for the famous Old 7. The flow country is considered the most Pulteney whisky comes from outstanding example of a blanket___ Loch _____. (9) landscape. (3) 11. The notorious steep braes of 9. The stretch of water between Caithness and _____. (10) Orkney. (8,5) 12. The _____ of Duncansby. (6) 10. One of Wick's two outdoor swimming pools, 13. The Flow Country was given this which lies near to Scalesburn. (5,5) great heritage recognition in 2024. (6) 14. Which Caithness village was historically known 17. Thor's River. (6) for flagstone exports. (10) 18. Caithness dialect for filthy. (7) 15. Writer from Dunbeath, Neil M ____ (4) 16. Famous 19th century botanist and geologist, Answers near the end of this book. _____ Dick. (6)

THE OUT OF STATE OF THE STATE O



YOU WILL NEED:

One Whole Uncooked Egg White Vinegar

Cling Film or Beeswax Wrap
Food Colouring (optional)
Wipeable Tablecloth
Bowl

METHOD

- 1. Place the raw egg into the bowl.
- Cover the egg with vinegar. If you would like the finished egg to be coloured, add a few drops of food colouring to the vinegar.
- **3.** Cover the bowl with cling film or a beeswax wrap.
- 4. Leave for four days.
- After four days, remove the egg from the bowl and rinse the shell off the egg under a running tap.
- 6. Drop the egg from about 5cm onto a table (covered with a wipeable tablecloth) to see how it bounces.

What do you think has happened to the egg?

Look closely at the egg in the vinegar - what can you see?

What does this experiment smell like?
Do you like it?

What has happened to the egg shell?

Can you describe how the egg feels now?



FUNT WORD SEARCH

Hidden in this word square are these twelve words:

SEAGULL STONE PUFFIN HILL SHELL SEAL

SAND SHEEP ORCA TREE FARM COW

The words are in a straight line, horizontally, vertically or diagonally. Can you find them all?

C N S H P P J D P X P M G W X L N Z P P F F I N I L C O E A H P R T D L L Z O N E R R S T R E L L M S T

Answers near the end of this book



DID YOU KNOW...

Caithness is one of the best places in Scotland to see Atlantic puffins. These charming seabirds nest along the region's dramatic cliffs from April to August. Duncansby Head, near John o'Groats, is a particularly popular spot where visitors can watch puffins up close. Despite their clumsy waddle on land, puffins are expert fliers and swimmers, using their wings to "fly" underwater in search of sand eels, their favourite food!

PERCHED AT THE NORTHERNMOST EDGE OF MAINLAND BRITAIN, THURSO IS A TOWN SHAPED BY CENTURIES OF CHANGE.

Even its name sparks debate - some say it comes from Horsa, a Saxon chieftain who raided Caithness in the 5th century, while others believe it honours Thor, the Norse god of thunder. Given the strong Scandinavian influence in the region, the latter seems fitting - especially since "Thor" also means "river" in Old Norse.

Thurso's location made it a vital military route during both World Wars. Tens of thousands of troops and military supplies passed through Scrabster en route to Scapa Flow, Orkney, before heading into battle across northern Europe. After the war, the town expanded, with new housing built to accommodate returning servicemen and their families.

Originally, Thurso was confined to the west of the River Thurso, but as the population grew,

Thurso: a Town of history and transformation

In the 17th and 18th centuries, Thurso thrived as a hub of trade, exporting meal, beef, hides, and fish across the country.

By the 19th century, the town became famous for Caithness flagstone, a durable rock that paved streets as far away as Sydney, Australia.

For nearly a century, the flagstone industry was a major employer, but as concrete and modern materials took over, production declined. Today, however, "Spittal stone" is making a comeback as a sought-after luxury building material, once again reaching markets worldwide.

so did the town, spreading eastward and beyond. A major turning point came in 1954 with the arrival of Dounreay, an experimental nuclear power station promising "cheap" electricity for the National Grid. The town's population doubled almost overnight, but with the station's closure, decommissioning is now the focus.

Through all its transformations, Thurso remains a town of resilience and reinvention. From Viking roots to wartime strategy, from flagstone exports to nuclear energy, its history is one of continuous change - always looking forward while honouring its past.

Colour in with Lindsey Gallacher

Local artist, Lindsey Gallacher, has created this line drawing of Olrig Street in Thurso for you to colour in.

A Caithness native, Lindsey graduated with first-class honours in Jewellery and Silversmithing from Edinburgh College of Art. During an artist residency at The Highland Wildlife Park, she developed her signature wire animal drawings, winning 'Best Artist' in Country Living Magazine's Kitchen Table Talent.

Lindsey now runs a studio in Thurso town centre, where she continues to innovate in both art and jewellery. You can find out more at lindseygallacher.com.



BUSTERS

123 456789

Can you complete
this grid so that
every row, column
and bold line
region contains
each of the
numbers from 1 to
9 only once?

			4		8	3			
	6			7	,			1	
7		2		9			5		4
	9		7		4	,	<u>J</u>	3	
		7		5		-	8		
	8		9		6			5	
9		4		1		1	7		8
	7			6				4	
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		B		F	'			1	G
		E				C	B	-	
			G	#			_		A
D	C		B						1

HGEFI CABD

Can you complete this grid so that every row, column and bold line region contains each of these letters only once?



MY AMAZING INVENTION

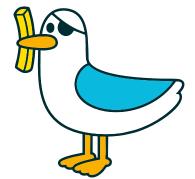
Invent something that will stop pesky seagulls from stealing your food at the beach! Whether it's your sandwich, chips, or ice cream, we all know how fast those sneaky birds can swoop in and snatch your snack.

Your challenge is to create a fun and clever device that keeps your food safe and sound while you relax in the sun.

Think about the problem you are solving and what your invention needs to do, what materials you will use and how your invention will work.

Why do you think this is the best solution?

DRAW AND COLOUR YOUR INVENTION HERE...



DESCRIBE YOUR INVENTION AND EXPLAIN HOW IT WORKS

WHAT IS YOUR INVENTION CALLED?



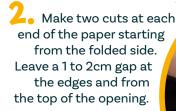
CAN YOU FIT THROUGH A SHEET OF A5 PAPER?



🖯 🎧 Open up your paper. Can you fit inside now?



Fold the piece of A5 sized paper lengthways so it is a long rectangle.



Keep the paper closed and flat. Insert your scissors into the second loop along the closed edge and cut the loops open, except for the outside two.

Turn the page over and keep doing this until you get back to the first cut at the other end of the page.



Turn the paper over and make the same cut but this time from the open end into the closed end. Make this cut 1 to 2cm away from the first one and leave a gap at the end.

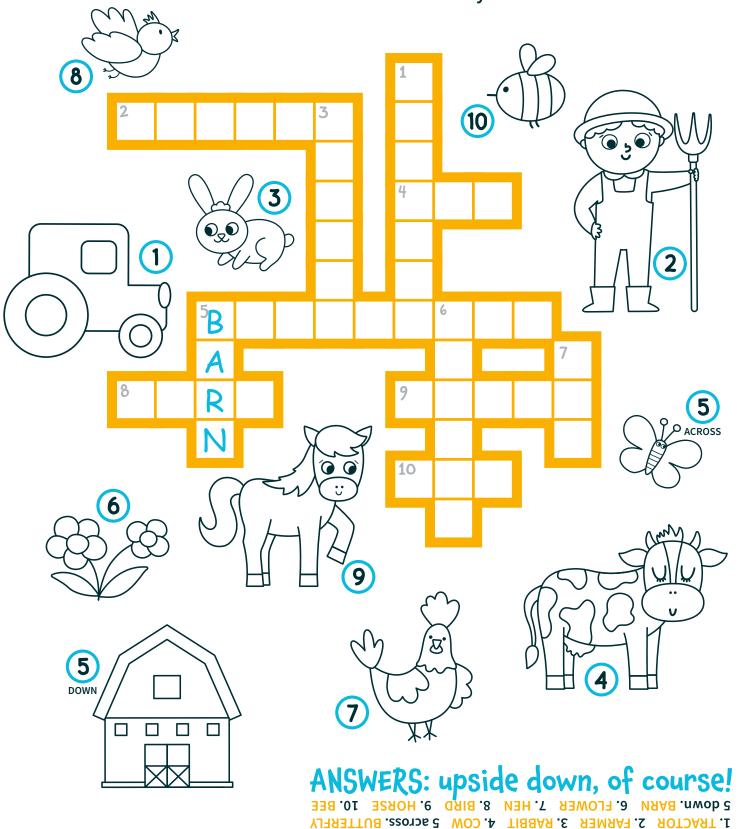
WHAT WOULD HAPPEN IF ...

The paper was smaller?

The paper was bigger? The cuts were closer together? The cuts were further apart?

CROSSWORD AND COLOURING PAGE

Can you complete this crossword using the pictures as clues? We've done the first one for you!



SPOT THE DIFFERENCE DOWN ON THE FARM

Do you have an eagle eye? Look at the two illustrations and see if you can find all TEN DIFFERENCES between them.

Some will be easy to spot, but others will be much trickier.



The Hi

DID YOU KNOW...

The Highland Cow is easy to recognise because of its long horns and shaggy coat,

As the name suggests, they come from the Scottish Highlands, where they are tough enough to handle strong winds and heavy rain. They are one of the oldest breeds of cow, dating back to the 6th century! Highland Cows can live up to 20 years, which is longer than most other cattle!

IRITE AN ACROSTIC POEM 3 ABOUT A FARM In an acrostic poem, the first letter of each line spells out a word, name, or phrase when read from top to bottom.





CAITHNESS DIALECT WORD SEARCH

The Caithness dialect is rich in character, shaped by Scottish Gaelic and Old Norse. Many words are unique to the area, though some are also used elsewhere in Scotland.

We have hidden 30 Caithness dialect words here. The words are in a straight line, either horizontally, vertically or diagonally. **CAN YOU FIND THEM ALL?**

HERE ARE THE 30 WORDS, WITH THE ENGLISH EQUIVALENTS IN BLUE

ALICKIE Pig
BEICE Cattle
BESOM Sweeping brush
BLACKJOCK Blackbird
BOORAGTOON Thurso
BOWD Breaking wave
BUMPIPE Dandelion
CLEVERFEETS Rabbit

CROC Hillock
DINNAD Dunnet

DUMBEITH Dunbeath

FAAP Curlew

FLOU The Caithness marshland

FOLIGYOO Whaligoe

GOLLAN Rainbow before a storm

GOWAN Daisy
HAKRIG Halkirk
HOOLET Owl
JABBLE Choppy sea

LETHERAN Latheron

LIFT Sky

OAKIE Gulliemot

PADDOCK Frog

PAELAG Porpoise

POLTNEY Pulteneytown

RUDDAG Robin
SCARF Cormorant

SILKIE Seal

WEEK Wick





YOU WILL NEED:

- FRESH LEMON

 (you may wish to try a few)
- · SHARP KNIFE
- · BAKING TRAY
- TEASPOON
- · FOOD COLOURING
- BAKING SODA
- FRESH LEMON JUICE (optional)

METHOD:

- Roll a lemon around on the table to help make it more juicy.
- Cut one end off the lemon, just the rind, this will help the lemon stand upright.
- Cut the the lemon in half and stand upright on the baking tray.
- 4. Use the teaspoon to mix up the inside of the lemon and create as much juice as possible.
- 5. Squirt in some food colouring.
- 6. Spoon in some baking soda and watch your lemon volcano erupt!
- 7. Squeeze a little more fresh lemon juice inside the lemon if desired.

DO YOU GET THE SAME RESULT WITH OTHER CITRUS FRUITS LIKE ORANGES OR LIMES?



CAITHNESS

M CHALLENG

HOW MANY OF THESE MINI CHALLENGES CAN YOU COMPLETE?

VISIT YOUR LOCAL **BEACH** to collect shells. Can you find a

GROATIE BUCKIE?

Examine different shells under a magnifying glass and sketch their patterns.

Using whatever materials you can find

BUILD A TOWER TALLER THAN YOU

creativity!

Go wild with your

CREATE A LEGO MAZE

that marbles can run through. Include turns, tunnels and dead ends to make the maze difficult to navigate.

Visit the

NIGHT SKIES EXHIBITION

at Thurso Library (26 April - 29 May 2025). Then, afterwards try identifying constellations.

Host a PAPER PLANE RACE

with your friends. Try different shapes and designs. Which one flies the best? You can find paper plane blueprints at www.foldnfly.com.

PEBBLE PAINTING

Collect pebbles and turn them into colourful creatures The possibilities are endless!

Search for

DEVONIAN FOSSII FIS

at Achanarras Quarry and research how they formed.

At the

NORTH COAST

VISITOR CENTRE

in Thurso, explore the

Robert Dick Collection.

the Stones Room and the

Dounreay Exhibition.

Design and draw your own

How would you make it move on sand?

CREATE LEAF ART

by placing leaves under a sheet of paper, then rub a crayon over them to reveal the intricate prints.

WHICH INVISIBLE INK WORKS BEST?

Write secret messages with milk, vinegar, and lemon juice. Let them dry, then use a hair dryer to heat up the paper and reveal the hidden words.

Visit the

STACKS OF DUNCANSBY

and create a drawing of these spectacular towering formations.

LEARN ABOUT BROCHS

at the brochproject.co.uk, then visit one. Sketch how you think it looked in the past.

MAKE A HOMEMADE PARACHUTE

Design and make a parachute to slow the fall of a small toy or object.

Venture into the

GREY CAIRNS OF CAMSTER

and imagine life 5,000 years ago. Draw a floor plan of these neolithic tombs.

Visit scratch.mit.edu online.

CREATE YOUR OWN STORIES, GAMES AND ANIMATIONS

using this simple coding programme.

Take a family trip and swim at

WICK'S OUTDOOR **POOLS**

while spotting seabirds.

Explore the woods at **DUNNET FOREST** and

WRITE A SHORT ADVENTURE TALE

> inspired by your surroundings.

Visit

WICK HERITAGE MUSEUM

and uncover the history of Wick. What did you learn? Did you find any unusual artefacts?

TEST YOUR REFLEXES!

Have a friend drop something and see if you can catch it before it hits the ground.

QUICK MOVES

WICK'S HISTORY STRETCHES BACK TO PREHISTORIC TIMES, WITH EVIDENCE OF EARLY SETTLERS IN THE REGION.

One of the oldest sites is Garrywhin Fort, an Iron Age hill fort. By the 8th century, Irish missionary St Fergus had arrived, establishing a church near the town's east end. Now the patron saint of Wick, his legacy remains woven into the town's identity.

From the late 9th century to 1231, the Vikings ruled Caithness, leaving a lasting influence. The town's name comes from the Norse word "vík," meaning "bay." The ruins of the

reached its peak as a fishing hub, though many fishermen left to fight in World War I.

Whisky has long been a part of Wick's heritage. In 1826, the Old Pulteney Distillery was established as the most northerly distillery on the Scottish mainland.

Its single malt, known as the "maritime malt," captures the essence of the sea. Though the distillery closed in 1930 due to local prohibition, it reopened in 1951 and remains a key attraction today.

Wick also holds a quirky world record. In 1883,

The rich history of Wick, from Vikings to whisky and the world's shortest street

Castle of Old Wick, built by the half-Norse Earl Harald Maddadson, stand as a reminder of this era.

Control of Wick later passed between powerful Scottish clans, culminating in the Battle of Altimarlach in 1680 - Scotland's last feudal clan battle - where the Sinclairs secured their dominance. Castle Sinclair Girnigoe, just north of Wick, remains a significant historical site for the clan.

Wick became a royal burgh in 1589, but its true transformation came in the late 18th century with the rise of the herring fishing industry.

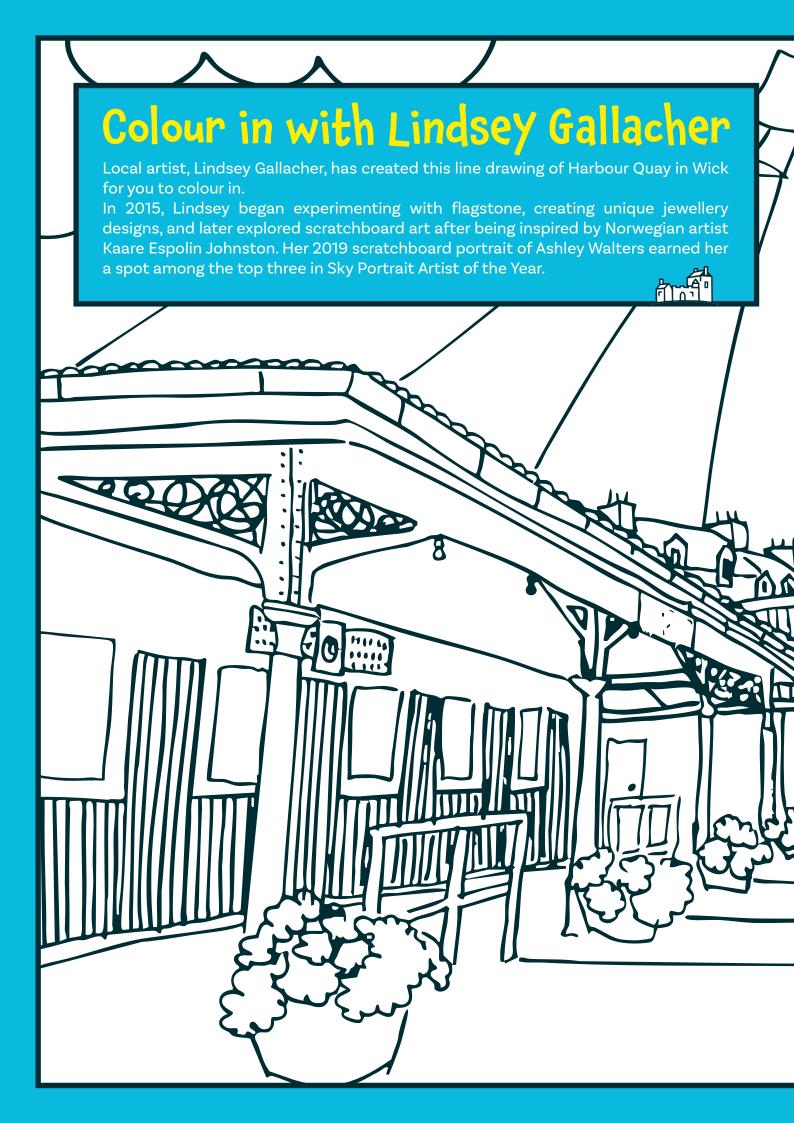
Engineer Thomas Telford designed a new harbour, completed in 1813, fuelling the town's rapid growth.

During the Highland Clearances, many displaced crofters relocated to Wick, finding work as fishermen. By 1912, the town had businessman Alexander Sinclair built a hotel at a five-road junction. When instructed to name the short end of the building, he registered it as Ebenezer Place—now recognized as the world's shortest street.

The town even earned a mention in 'Treasure Island', with author Robert Louis Stevenson inspired by his time there while his father worked on a breakwater project.

From Viking stronghold to fishing powerhouse, and clan battles to whisky distilling, Wick's past is as rich and fascinating as the landscape that surrounds it.

On the next page you will find a Wick colouring page created by local artist, Lindsey Gallacher.













Who can help in my career journey plan?

- Parent/Carer Teacher
- Careers Advisor

Find out about yourself and explore your career options. Visit the

My World of Work

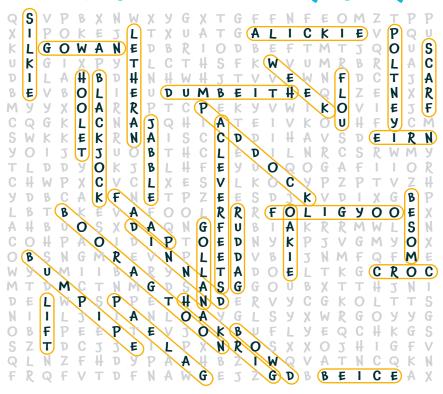
website and follow the steps. myworldofwork.co.uk

TWORKS

ALL ABOUT ME

My name	My age	
My school		
Favourite food		
Favourite TV programme		
Favourite singer		
Favourite thing to do outdoors _		
Favourite thing to do indoors		
The job I'd like to do is		
If I had £1,000,000 I'd buy		
FUN QU	ESTIC	DNS
What do you think you will be do	oing ten years from r	iow?
What makes you angry?		
What makes you laugh?		
What's the most interesting thir	ng you've read or see	n this week?
If you were transported 400 yea possessions, how would you prov		
What's the closest thing to real	magic?	
If animals could talk, which would	ld be the rudest?	
How many parrots would it take	e to lift an elephant?	
What's invisible but you wish pe	ople could see?	
Would you rather be poor with §	great friends or rich v	with none?
Would you rather be invisible or	be able to fly?	
Would you rather find 10,000 sp	iders in your bedroo	m or one tiger?

CAITHNESS DIALECT WORD SEARCH





NESS CROSSWORD

- 3. JOHN O GROATS
- 17. THURSO 7. BLACKJOCK

13. UNESCO

18. FOUSOME

- 8. HEMPRIGGS
- 11. BERRIEDALE
- 12. STACKS

- 1. EBENEZER PLACE
- 2. WICK ACADEMY
- 4. SHOCHAD
- 5. BEATRICE

7. BOG

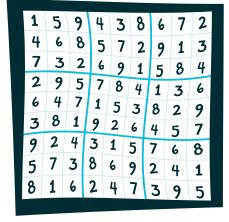
- 6. GROATIE BUCKIE
- 9. PENTLAND FIRTH
- 10. NORTH BATHS
- 14. CASTLETOWN
- **15.** GUNN
- 16. ROBERT

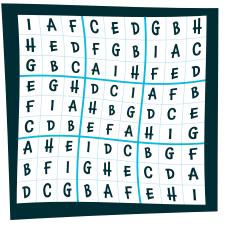
WAY TO THE FARM HOUSE!

HELP THE FARMER FIND THE

The correct route is 4.

BRAIN BUSTERS





FUN WORDSEARCH





Create a paper dog that can walk on its own



- 1. Cut out the paper dog.
- 2. Cut into the legs stopping at the body.
- 3. Fold the head and tail up and the legs down.
- 4. Steady your dog on the top of a ramp and let it walk down on its own.



WHAT DO YOU NOTICE HAPPENING?

The angles on the legs make the dog rock side to side, and gravity pulls the dog down the ramp.

IF YOUR DOG IS HAVING TROUBLE WALKING, WHAT COULD YOU CHANGE?

Does the incline of your ramp need to change?

Does the friction on the ramp need to change?

Does the angle of the legs need to change?



DID YOU KNOW...

Dogs have an incredible sense of smell that's up to 100,000 times more powerful than humans? Their noses contain around 300 million scent receptors, compared to our mere 5 million! This super-sniffing ability allows them to detect diseases, locate missing people, and even sense human emotions. Some breeds, like Bloodhounds, are so skilled at tracking scents that their findings have been used as evidence in court!



This activity book was produced with funding and support received from DYW North Highland.



