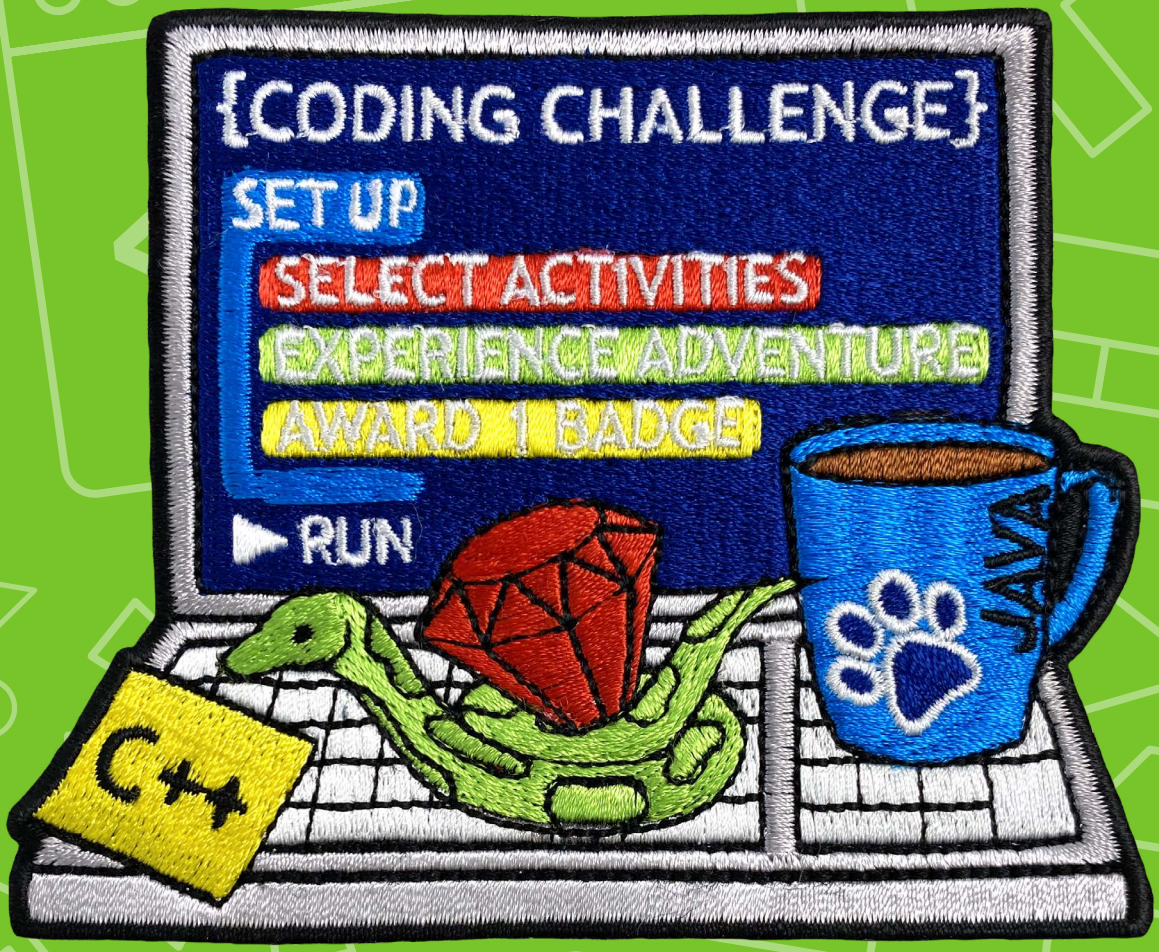
PAWPRINT BADGES

Coding Challenge



Be prepared for the future and discover the world of coding!
From problem solving to teamwork; coding can teach you so much. Explore it all with the 2021 Design Competition winning design, by Constance Carter.

For even more programme ideas check out our 'Coding' board over on www.Pinterest.com/PawprintFamily

#AdventureForAll
www.PawprintFamily.com

Meet the FAMILY

Hi there! We're Charlotte & Jamie, the husband and wife team behind the Pawprint Family and we believe in #AdventureForAll.

It's our mission to help leaders, teachers and parents save time by providing ideas and opportunities to help them deliver everyday adventure and skills for life. We do this through our family of brands; find out more below and head to the website for your next adventure!

PAWPRINT BADGES

Pawprint Badges provides thousands of free activity ideas and resources to help leaders, teachers and parents deliver fun and adventure.
Every activity helps you share skills for life and is linked to one of our pawesome embroidered badges. Build your collection and celebrate adventures, new skills and knowledge gained.

PAWPRINT TRAILS

Pawprint Trails are treasure-hunt style walks around locations in the UK. Solve puzzles, track down the answers and explore everything our great country has to offer.
From historical sights to popular culture discover something new or rediscover a love for where you live then collect the badge to remember your adventures!
Whether you're looking for the perfect addition to your next family holiday or a few hours of fun with friends; each trail can be completed in a few hours or extended with our activity suggestions in to a weekend or a week's worth of fun!

PAWPRINT TALES

Pawprint Tales are fully illustrated stories that can be enjoyed by the whole family. Join Alfie (our fox-red Labrador) on his adventures around the UK – solving puzzles, turning detective and making new friends. With twists and turns, every tale is an opportunity to discover new places, people and history without needing to leave the comfort of your own home.
Enjoy Pawprint Tales alongside your Pawprint Trails or as a standalone adventure!

PAWPRINT TRUST

Every brand in the Pawprint Family supports the Pawprint Trust with a percentage of profits from every sale providing grants to young people. We're passionate about enabling young people to access life changing adventures.

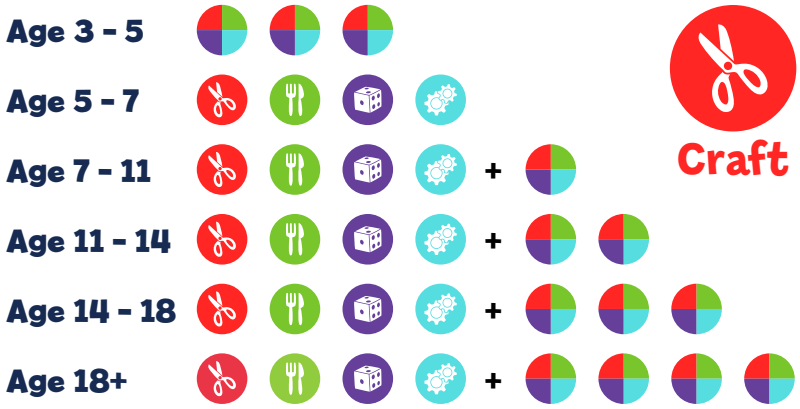
Share your adventures and join us over on our social channels for even more adventures and a nosy behind the scenes at Pawprint HQ!

@pawprintfamily @pawprint_family

HOW TO:
Use Your Challenge Pack

PAWPRINT BADGES

This Challenge Pack has been divided in to 4 sections: Craft, Food, Games and Other. In order to help you provide a balanced and varied programme for your young adventurers we recommend that the following number of activities are completed by each age group:



Leaders, Teachers & Parents

Award yourselves a badge for supporting your young adventurers in their activities!

TOP TIPS

- Adapt activities as necessary to meet your needs.
- Add your own activity ideas or develop them into projects.
- Use what you have; don't buy in lots of new materials/equipment.
- No need to send us evidence, responsible grown-ups decide when the badge has been earned.
- One challenge badge can take as long as you like; from a few hours to days or even a full term!

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Use this resource with your young adventurers.	Redistribute or sell this resource in any way, shape or form.
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Tell your friends/family/colleagues about us!	Copy or modify any part of this resource to share with others either for free or for sale.
Share photos of you enjoying your adventures with us on social media.	Use any text, graphics, content or fonts without our written permission.

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Craft

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- Build a maze using building blocks and then solve it creating a coding sequence (also known as an algorithm). From a starting point use instructions such as up, down, left, right to move through your maze.
- Make beads in 2 colours using materials of your choice and use them to create your own binary code bracelet.

> What?
> Binary code is the language computers use. Everything you see on screen can be represented by a series of 0's and 1's. Once you've got the hang of it it's as easy as 01, 10, 11! Find a binary code alphabet over on our Pinterest board.

- Use iron-melt beads to create a coaster or table mat with a binary code message or to make your own pixel art.
- Paint your own pre-coding pebbles with arrows going in different directions. Use them to create simple codes to get characters/animals from one location to another in a grid.
- Origami and coding are like bangers and mash, they go together perfectly! Develop your sequencing and problem-solving skills by creating something with paper.

> What?
> Origami is a sequence based craft. In order to move on to the next step you have to complete another and some instructions loop and repeat. Why not try and create something a little more challenging by using decomposition too and work backwards from the end result to put your steps in order. There are lots of origami instructions online to get you started. See our Pinterest board for some ideas.

- Complete some directed drawing using an algorithm, i.e. draw a circle, add 2 eyes, add a smile. An algorithm is a series of steps for completing a task.
- Make your own pom-pom bug. In coding the term bug refers to broken code that causes a malfunction but we like to think of them as cute little creatures sneaking around in our computers!
- Create your own unplugged coding activity to teach someone else about the basics of coding or problem-solving.
- Cut out your own jigsaw puzzle pieces that can be put together to create some simple instructions (code); this idea is like block coding.

Food

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- Write an algorithm for making a sandwich and get someone else to follow. How successful were they? Do you need to edit your algorithm and add more instructions?

For Leaders!
For younger adventurers focus on getting the sandwich making steps in the correct order. For older adventurers think about the different sequences needed (separate sets of instructions), such as opening the butter or slicing the cheese, that are needed to make the whole algorithm work. Programmers need to break down (decompose) problems and pay attention to the smallest details to ensure that apps/programmes work.

- Create an algorithm for baking biscuits. Make each biscuit square so you can place them in a coding grid so you can create a picture or navigate a maze.
- Use different pasta shapes to create messages in binary code. Use 3 different shapes; one for 0's, one for 1's and one for spaces/breaks between letters/numbers.
- Make an edible code using sweets. Assign different colours to different instructions, i.e. blue = up, red = down and then create an edible code to navigate through a maze.
- Test your problem solving skills and use only ingredients you have to bake or make a dish. What can you use as alternatives or how can you adapt/work around missing ingredients?
- Coding relies on sequencing and each step in the process being correct. In a team make a fruit salad with each person being responsible for a single job, i.e. peeling, cutting, mixing. How successfully can you work as a team?

For Leaders...
Why not turn your groups in to one big algorithm giving a selection of equipment and getting your young people to organise themselves in to a sequence which will produce the desired result.

- Use tynker.com to create your own cooking game or programme. See what others' have created first and take inspiration from there. Could you create a pizza topping game?
- Test your teamwork: Split equipment, ingredients, method and recipe between the group so each person has something different (and can only use what they have) but together you have everything you need. How successfully can you organise yourselves to create your dish?

Games

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- Use binary code to send secret messages or to decode messages you have received.
- Programme your way through an obstacle course by creating a set of instructions for someone else to follow. Can they successfully navigate the course?
- There are over 700 programming languages; how many can you name? Not many?? Do some research and see how many you can find.
- Age 9-13? Create your own game or play a game created by someone else around the world using 'Hopscotch - Programming For Kids'.
- Play Robot Turtles™, the board game from Thinkfun. Designed for ages 4 and up.
- Have a game of X Marks the Spot!

  How?
  Lay out a grid of game pieces (circle counters from a game like Connect 4 work well). With a wipe-able marker mark one of the pieces with an 'X'. From a chosen starting point write a set of instructions to reach 'x', i.e. up 2, right 3.
  Fancy more of a challenge? Get someone else to hide the 'x' piece face down in the grid. Now create your code and see if you can correctly uncover 'x'. Alternatively, you hide 'x' and become the game maker, writing a code for someone else to follow.

- Play Code Monkey (codemonkey.com) and solve challenges by writing code.
- Fold it with code!

  What?
  In pairs, sit back to back with one person giving the other a set of instructions to make an origami shape/animal. How good were the instructions?

- Have your own Spacewar with water balloons or foam-based bullets. The very first game designed specifically for computer play was called *Spacewar!*, designed by Steve Russell (and others) in 1962.
- Discover some of the amazing free coding resources available and programme your own game.
- Create your own game either online or 'unplugged' to teach some of the skills you need to be a successful programmer.

Other

PAWPRINT BADGES

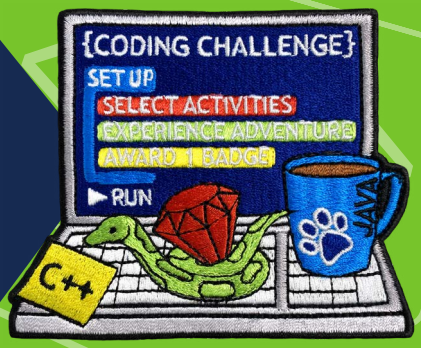
- Create your own sequences for daily routines and make a routine chart to follow. Our daily routines are algorithms packed with smaller sequences.
- Take on some simple coding challenges for free with 'Code with Google'.
- Age 8-16? Have a go at creating your own code using scratch.mit.edu. Age 5-7? Try scratchjr.org.
- Read *Unplugged* by Steve Antony about the fun that can be had inside and outside!
- Write a story using code and do some unplugged coding using a coding mat (a grid with pictures in), check out our Pinterest board for some ideas.
- Celebrate Ada Lovelace, widely recognised as the creator of the first computer programme.
- Discover some of the jobs and careers you could access by learning the skills taught through coding. In a recent survey, almost 70% of coding jobs had nothing to do with technology.
- Complete your Alan Turing badge. Regarded as the father of computer science, he invented the idea of a 'Universal Machine' that could perform any set of instructions when supplied with an algorithm or program.
- Go on a bug hunt or set up a moth trap using a sheet and a torch.

Why?
The idea of a 'bug' as a problem was around wayyyy before computers. Thomas Edison used it in 1869 to describe problems in his own inventions, however, the first actual case of a bug being found and logged was in 1947. Grace Hopper of the U.S. Navy was working on a Mark II computer at Harvard University when she discovered a moth stuck in a relay, preventing the operation of the relay. They literally debugged the computer!

- Learn more about coding using www.hourofcode.com/uk/learn.
- The first computer virus was a Creeper (a self-replicating computer programme). It wasn't intended to bring harm and caused no damage. The only effect was putting out a message reading, "I'M THE CREEPER, CATCH ME IF YOU CAN". Play hide and seek to 'catch the creeper' or plant and grow a creeper in your garden i.e. Clematis or Honeysuckle.
- Create a big pixel art by following a code i.e. row 1 = 3 blue, 2 pink...

Adventure Complete?

Reward your young adventurers with their Coding Challenge badge to **mark their achievements**! Head to the website to bag yours, download certificates and discover even more adventures!



Create a Keepsake!

Experienced **adventure**? Made **memories**? Then it's time to create a **keepsake**! Our Pawprint Family camp blankets are the perfect place to **sew your badges** and look back on them for years to come.

Personalise it!

Got your camp blanket? Then it's time to make it yours! Our alphabet badges are **big, bright and bold**...the perfect addition to your camp blanket, hoodies, bags and more. What will you personalise first?

Even More Rewards!

We're all about added value here at Pawprint Family. In addition to the 1000s of **free activity ideas** and resources you'll find **loyalty stickers** in every order and you can claim Children's University learning hours too!

Subscribe to the **Tribe News** for all the latest adventures direct to your inbox!

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