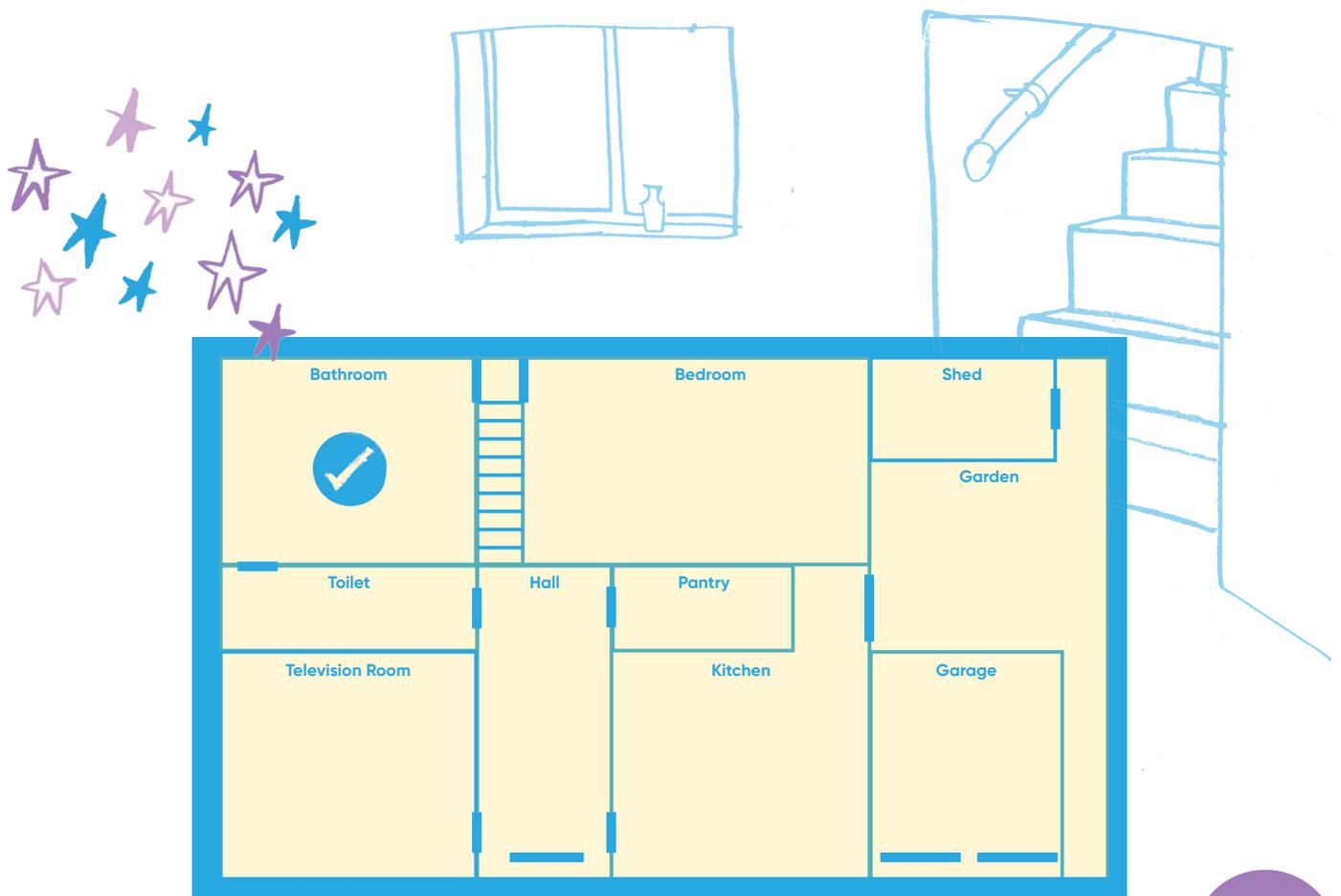


The bathroom/toilet might not be the biggest room in the house – but it still offers lots of learning opportunities!

There are four challenges here: one for children aged 4 – 6, one for those aged 6 – 8, one for those 9 and over – and one for the whole family. We'd suggest that your children tackle the age-appropriate challenges as independently as possible – before all settling down together for the Family Challenge.

Your children can write their responses on anything – but if it helps, there are printable worksheets at the end of this document. In fact, you can type directly onto these on your device, too, if you want to cut down on printing!



Bathroom Brainwaves!



Ages 4 - 6

Challenge 1: Literacy

Ask your child/children to pick something in your bathroom/toilet. Explain that the challenge is to think of five more household items that begin with the same letter - and to write (or draw) them all down.

Challenge 2: Maths

Explain that this challenge looks at different ways of measuring things. Ask your child/children to select any five portable objects from the bathroom and/or toilet. Using any of their senses (apart from taste!), they are to identify which is the longest object - and record their answer in words and/or pictures.

Set your child/children the task of working in the same way to answer four more questions, recording their responses each time ...

- Which is the shortest?
- Which is the heaviest?
- Which is the lightest?
- Which is the most expensive?

Make sure your child/children puts all their objects back where they came from when they've finished the challenge!

Note: this is a brilliant way of helping your child understand that there are lots of different ways of measuring "size"!

Challenge 3: Science

Explain that the challenge is to demonstrate that some things will float in water - while others, of course, will sink. Work with your child/children to select five objects from the bathroom/toilet - all of which you're happy to get wet!



Bathroom Brainwaves!



Ages 4 - 6

With the plug in, turn the bath or basin taps on – you won't need more than a centimetre or so of water. Ask your child/children to pick up one of the objects, predict whether it will float or sink – then record what the object is (with either a word or a drawing) and the letter "F" or "S", according to the prediction.

Your child should then test the prediction by placing (not dropping) the object in the water and leaving it for a few seconds. They should then place a tick or a cross by the letter they have written – depending on whether or not the prediction was proved correct.

The process continues until predictions have been made – and tested – for all five objects. Can your child/children think of any explanations for what has happened?

Note: counterintuitively, it's not the weight (or mass) of an object that determines whether or not it will float to sink – and this is a great way of demonstrating this! It's also fantastic for exploring the concept of "fair experiments". And it can also, of course, be combined with bathtime!

Challenge 4: The Weather

Talk with your child/children about different kinds of weather – and how they make us feel. Now challenge them to use objects found in the bathroom/toilet to create a 3D model called "A Sunny Day at the Beach". They must follow five rules ...

1. The model must be contained within a specified area (the bath makes sense, if you have one – and if no-one is using it!)
2. They can only use objects found in the bathroom /toilet ...
3. They cannot use any sharp objects ...
4. There must be no waste ...
5. There must be no water (ignore this at your peril!).

Once the model is complete, other family members should be allowed to come and view it. After which, of course, your child/children will need to put everything back where it came from!





Challenge 1: Literacy

Ask your child/children to select an object found in your bathroom/toilet, but not to tell you what it is. Explain that the challenge is to write down five words that might be used to describe their chosen object. How many words will it take before you (or another family member) guess what they are describing?

Repeat the activity with four more objects.

Challenge 2: Maths

Provide your child/children with a large bath towel. It should be one that you don't mind getting a bit dirty – as it's going to spend some time on the floor! Explain that this challenge is about shapes – and that the first task is to find a way of folding the towel to create two rectangles, of different sizes. Your child/children should draw their solution, as a record.

Now that everyone's got the hang of things, set them to four more problems. For each solution, it's the side of the towel that faces upwards that's important, so it is permissible to fold parts of the towel underneath itself (though you might want to leave your child/children to work this out for themselves!). All the solutions should be recorded ...

- A triangle and a rectangle ...
- Two equally sized triangles ...
- Three different sized triangles ...
- A hexagon and a square.

We'd love to see how you get on with this – so why not tweet photos of your towels, using @AsCreatives and #FamilyConnect

Challenge 3: Science

Explain that the challenge is an exploration of "displacement". Work with your child/children to select six objects from the bathroom/toilet – all of which you're happy to get wet! Put the plug in the basin, and fill it to about a quarter full. Use a non-permanent marker to note the water level. If you don't have one, a piece of gaffer tape/parcel tape will do – or, failing that, a piece of sellotape.



Bathroom Brainwaves!



Ages 6 - 8

Ask your child/children to choose one of the items – and place (not drop) it in the water. The water level will rise – mark the new level. Now that the concept of displacement has been demonstrated, ask your child/children to come up with a list predicting the order in which the other five will displace water, from the greatest displacement to the least. **They should record this list.**

If you're happy there'll be no undue mess, leave your child/children to complete the challenge alone – if not, stay with them. They should measure the displacement caused by each of the objects, record the actual order – and compare it with the predicted order. Can your child/children think of a way to explain what has happened?

There's still one more layer to the challenge to go, though, because your child/children will have to dry all the objects – and return them to where they came from!

Note: counterintuitively, it's not the volume of an object that determines its displacement, but its weight (or mass) – and this is a great way of demonstrating this! It's also fantastic for exploring the concept of "fair experiments".

Challenge 4: The Weather

Talk with your child/children about different kinds of weather. Look around the bathroom/toilet – what might represent sunny weather? There's no "right" or "wrong" response – but a lot of children might identify the window (if it's a sunny day), the light – or a yellow sponge.

Explain that the challenge now is to find five more objects in the bathroom/toilet – and associate them with different types of weather. Your child/children should record their ideas, in words and/or pictures.

Note: this is a fantastic way of supporting your children in using their connection-making skills – and connection-making, of course, is a key marker of creativity!



Bathroom Brainwaves!



**Ages 9
and over**

Challenge 1: Literacy

Ask your child/children to select an object found in your bathroom/toilet. Explain that the challenge is to come up with as many alliterative adjectives as they can, by describing the object using words that begin with the same letter ("Squishy Sponge", for example) – and to write these down. Repeat the activity for four more objects.

Challenge 2: Maths

Explain that the challenge is to describe objects found in the bathroom/toilet – but purely in mathematical terms. So the description, "A cuboid: 10cm long, 7.5cm wide and 1.5cm deep" would be a fairly accurate description of a new/newish bar of soap.

Ask your child/children to select any five objects to be found in the bathroom/toilet, devise mathematical descriptions for each – and write them down. Once they have all five, they should "test" them on another family member (possibly yourself, if you have time!). A couple of things to remember ...

- Some objects may be made up of more than one shape. A shampoo bottle, for example, could be reasonably described as a small cylinder on top of a large one.
- If you don't have a ruler or tape measure in the house, it might be useful to know that an adult's toothbrush is about 20cm long.



Bathroom Brainwaves!



**Ages 9
and over**

Challenge 3: Science

Explain that the challenge is to try and make a boat that will float – but from limited resources and materials. Ask your child/children to try and design and build a boat from paper/card/toilet roll tubes you have lying around (and that you don't mind being wet/destroyed) – but not from plastic. The idea is to try and make a boat that will float for five seconds without taking on any water.

If they were going to do this again, what would be their Five Top Tips? These should be recorded.

Challenge 4: The Weather

Talk with your child/children about different kinds of weather, helping them come up with as many "weather words" as they can. Ask them what is going on if the soap represents "sunny weather" – and the toilet represents "tornadoes". Explain that the challenge is to take the same approach in identifying five more things found in the bathroom/toilet, each one representing a different "weather word" – and to record their responses.



Bathroom Brainwaves!



Family Challenge

Getting Started

Explain to the whole family that this is going to be a **Memory Challenge** - and that you need to sort out teams. There are lots of ways that you could do this – but here are a few ways of using the family's **mathematical skills** to sort it all out ...

- If there are only two of you, you'll play as individuals ...
- If there are three of you, the oldest family member will play as an individual, with the younger two making up a team ...
- If there are four of you, the oldest and youngest will make up one team – with the other two forming a second ...
- If there are five of you, the oldest family member will play as an individual, the oldest and youngest of the rest of you will make up one team – and the other two make up another ...
- If there are six of you, the oldest and youngest will make up one team, the next oldest and next youngest will make up another – with the remaining two forming a third ...
- If there are seven of you, the oldest family member will play as an individual, the next oldest and next youngest will make up one team, the next oldest and next youngest of those who remain will make up another - with the remaining two forming a third ...
- If there are eight or more of you, we'll leave you to do the maths yourself!

Equip every team (and any family members playing as individuals) with a piece of paper – and something to write with. And place a non-transparent shopping bag in the bathroom.

One last thing – if you have a hyper-tidy bathroom, you're going to need to put some items in there. You'll want a minimum of twelve items, none of which should look too incongruous!



Bathroom Brainwaves!



Family Challenge

Establishing the Scene

Everyone needs to visit the bathroom, having a minute each to memorise as many of the items in there as they can. If the room is too small for you all to fit in at once, teams should take turns – and team members are allowed to talk to each other (and, of course, discuss strategies).

Round 1

The team with the youngest member of the family in it should return to the bathroom – and place any three items in the shopping bag (remembering as precisely as possible where they came from).

The remaining teams (and any individuals) return to the bathroom and have thirty seconds to identify – and write down – which three items have been removed. Once again, if the room is too small for you all to fit in at once, teams should take turns – and team members are allowed to talk to each other.

Teams reveal their answers – and the items are taken out of the shopping bag. Teams score two points for each item that has been correctly identified – and the items are returned to their original places. Everyone now leaves the bathroom.

Round 2

The team with the next youngest member of the family in should return to the bathroom – and place any two items in the shopping bag (remembering as precisely as possible where they came from). The game proceeds as in Round 1.

Round 3

Depending on how many teams/individuals you have, either the team with the next youngest member in or the first team will return to the bathroom (and this is how things will go from now on). This time, one object is placed in the shopping bag.

Round 4

Whoever returns to the bathroom switches the positions of three items.

Round 5

Whoever returns to the bathroom switches the positions of two items.

Round 6

Whoever returns to the bathroom moves one item by five centimetres.

Summing Up

Add up the total number of points won by each team/individual. Whoever has the highest total are crowned the Family Memory Meisters!

