

# Science Challenge



## Ball and Feather

Let's look at Air resistance.

### You will need:

1. A ball and a feather.
2. A selection of other materials to explore with.

### What you do:

1. Hold a bouncy ball in one hand and a feather in the other.
2. Drop them from the same height at the same time.

### You should find:

The ball reaches the ground faster than the feather. Why is this?

This is because there is less air resistance acting on the ball because it is streamlined, so it can travel faster. IT IS NOT BECAUSE IT WEIGHS MORE.

If there was no resistance from the air, then a feather and ball would both drop at the same speed.

### Extension:

Explore your house and your garden for other materials that you can experiment with. Watch to see which object hits the ground first. Can you order all the objects from fastest to slowest? Which ones have the most/least Air resistance?



whizzpopbang.com

# Technology Challenge



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## Light Travel

You will need:

1. A torch – if you don't have a torch you can use the torch on a smartphone.
2. Old packaging and materials.

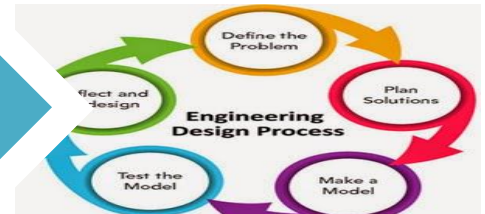
What to do:

- Investigate colour with your children by providing a torch and a selection of materials such as netting, sweet papers/wrappers and tissue paper. Anything you want to explore. Can they change the colour of the light beam? What happens when they project onto white paper? On black? On newsprint? On their hand?
- Sorting transparent, translucent and opaque materials.
  - Different materials have different properties. Some let light travel through them really well, others not so much, others not at all.

**Theses are called:**

- **Transparent** – lets the light pass through so that objects behind can be seen clearly
- **Translucent** – lets light pass through but objects behind are blurry.
- **Opaque** – is not able to be seen through.
- **You are going to** investigate **different materials**, for example, a brick, some tin foil, clear plastic, coloured plastic, wood, water in a variety of containers, cotton towelling, cotton wool. The children should predict which of the three categories the materials should be placed in and then test their predictions by holding them up and trying to look through the material to something in front of them.

# Engineering Challenge



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## Outdoor Challenges - Sticks

Let's explore with Sticks.

Can you build a tower out of sticks? The tower has to stand on its own. How high can you build the tower? Challenge an adult to a competition to see who can build the highest tower.



Can you create a stickman or stickwoman? Think about what size of sticks you will need. What could you do with the sticks if you have too many long ones?

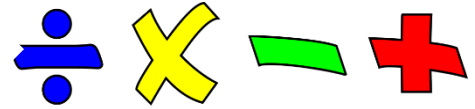


Can you build a den for a mini creature? What natural resources can you find outside to use? Think about how you will keep your creature warm and dry.

Can you build a den that you can fit in?! What can you find in your house or outside that you could use? Chairs make good supports for building dens in the house.

Can you create and fly a kite? You could use sticks and plastic shopping bags as your materials. What kind of weather does your kite fly in best?

# Maths & Numeracy Challenge



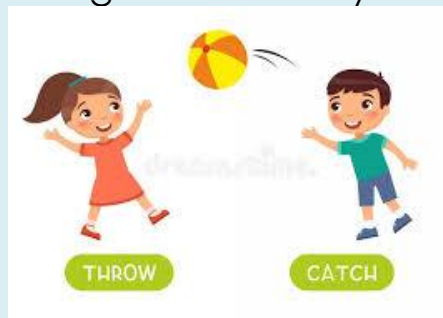
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## Outdoor Maths

1. You can play hopscotch. Draw a board on the ground with chalk or mark it with a stone. Which numbers do you know? You can use sums and answer them when you land.



2. How many colours can you find outside? Count them all up. How many different shades can you see? Write down the numbers so you don't lose track.
3. You can play catch. Count up each time you manage to throw and catch the ball with a partner. If you don't have a partner, you can bounce the ball off a wall. What's the highest number you can reach?



[dreamstime.com](#)

4. A different catch challenge is to see how far apart you can stand from your partner and still catch the ball. How will you measure how far apart you are?
5. Go for a walk. How many words or letters can you find? Look for signs, boards and adverts on buses.

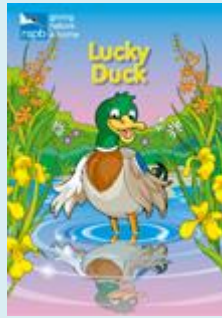
# Literacy Challenge



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## Characters in a Story

Did you know that we can learn a lot about birds by birdwatching? In a few weeks, the RSPB is having a 'Big Garden Birdwatch' where you can learn more about different species (types) of birds and count how many you can see from your garden. Today we are going to read a story called 'Lucky Duck', which is all about birds. In the story, we meet a duck. He notices the differences between himself and his other friends who are all different species of birds.



You can read the story by clicking the link below.

<https://www.rspb.org.uk/globalassets/downloads/kids--schools/big-schools-birdwatch-downloads/luckyduck-story-book.pdf>

You may need an adult to help you get onto the book and read the story with you-

What species of bird did we meet during the story?

What makes each bird different and unique from their friends?

Do they have any features that are the same?

Do you think that they are all lucky?

**Discuss these questions with an adult or older sibling.**

Can you think of any other birds that the Lucky Duck did not meet during the story? How about a penguin? Or an Owl?

It is your turn to continue our story! Pick another bird to join the story. What makes them lucky and different from the rest of the birds? Draw a picture of the bird you chose.





# Health & Wellbeing Challenge

## Crazy Circuits!

It is time for some exercise! Today we are going to do some circuit training. When you do circuits, you complete several short exercises in a certain order. These exercises may include star jumps, running on the spot and many more! We spend a certain amount of time on each exercise or set a number for the amount of times we will do an exercise, such as 20 star jumps. To make it more fun, we can listen to music while doing these activities.

**By doing these exercises, we are staying active and becoming healthier!**

Here are some activities for you to try as part of your circuit. Let's improve our counting skills by counting out each activity!

1. 20 star jumps
2. Running on the spot (slowly count to 20- 1 elephant, 2 elephant, 3 elephant...)
3. Throwing and catching a ball (or soft item) 20 times
4. 15 press ups
5. Skipping around the garden or your room (count to 20)
6. 15 sit ups



**Repeat these 6 exercises as many times as you like! Maybe you could roll a dice to tell you which activity to do next in your circuit?**

How does your body feel after completing these exercises? Is your face getting warm? Can you feel your heart beating a little faster? These things show that you are working hard!

Now it is time for you to make up your OWN circuit! You are going to plan your own circuit. You can use some of the exercises we have already done, or you can make up your own ones. If you have more items at home such as a skipping rope or football, you could use those in your activities. Remember to set a number for each activity and count it when completing your circuit.



# Social Studies Challenge



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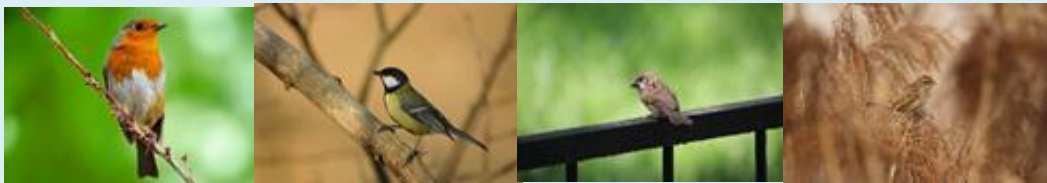
## Big Garden Birdwatch

Can you think of any types of birds you have seen in and around your garden before? Or maybe when you have been out for a walk?

Bird watching has lots of benefits. It can help lift our moods and spirits! It is a good way to get fresh air outdoors and spend time with family while getting to explore our local area.

To prepare for the Big Garden Birdwatch, you can have a go at completing the activities below. These will help to improve your knowledge of birds and birdwatching!

1. Using an egg timer or timer on an adult's phone, set a timer to 10 minutes and head outside! This could either be to your garden, out in your street or on a walk. In these 10 minutes, count how many birds you see around you. Keep the number in your head or have a go at writing down tally marks on a piece of paper. After the 10 minutes is up, how many birds did you see? Was it more or less than you thought?
2. Head outside to do some more birdwatching. Pay close attention to the birds. What do they look like? What colour are they? Are they big or small? Have a go at drawing them on a piece of paper.
3. Think of a bird you saw when birdwatching. Let's find out the species of it! Click the link to head to the RSPB website and answer questions to identify the bird.  
<https://www.rspb.org.uk/birds-and-wildlife/wildlife-guides/identify-a-bird/>
4. Have you ever wondered what type of bird you would be if you were a bird? Take a quick quiz to find out!  
<https://www.rspb.org.uk/get-involved/activities/birdwatch/which-garden-bird-are-you/>



# Expressive Arts Challenge



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## Winter Birds

To help us prepare for the RSPB 'Big Garden Birdwatch', complete the art activity below-

### Handprint Bird Art

Follow the pictures and instructions below to make a handprint bird.

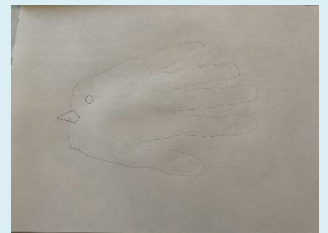
You will need-

- A piece of paper
- A pencil
- Colouring pencils/pens (these are not necessary- if you don't have any at home, don't worry! We can do our art without)

**Step 1-** Put your pencil in the hand that you write with and place your other hand in the middle of the piece of paper. Carefully draw around your hand. You may need an adult to help you with this step.



**Step 2-** Once you have drawn around your hand, add a circle for an eye, and a kite shape for a beak for your bird.



**Step 3-** Draw feet for your bird and add a tree for it to perch on. Don't forget to add some snow to your branches.



**Step 4-** Add some colour to your bird! Using colouring pens or pencils, outline your hand print and add colour for the eyes, nose and feet. You can also colour the inside of the bird if you like. If you don't have colouring pens or pencils, that's okay! Add feathers to the bird by drawing faint lines with your pencil.

