



Aga Khan Education Board
for the United Kingdom | akeb@iiuk.org
Every Step, together

Engaging young children with science: a basic guide

Gulzar Kanji



fair 

20 October 2019

12.30 - 5pm

Ismaili Centre, London

3-16 Years (+parents)



Engaging young children with science: a basic guide

Look around where you are right now. What can you see? What can you hear? What can you smell? **Science is all around us!** Everything we do has a scientific concept of some sort behind it. And that means you can engage your child with science super easily.

What is science and what does it involve?

- Science is concerned with understanding the way things are and why they behave as they do.
- Science involves **practical activity**. It is a systematic study of the structures and behaviour of the physical and natural world through **observation, investigation and experiment**

What can I do to start doing science with my child?

- Look closely at things with your children
- Encourage your children to be curious and take an interest in their environment
- Listen to your children's comments and expand their understanding by talking to them
- Play with them and make activities fun and enjoyable but also spark their curiosity by asking open-ended questions and help them ask more questions

What's the learning process?





What scientific skills can I help my child acquire?

- **Observing:** Children can become great observers if they are helped to look carefully at objects, plants, animals, materials, and encouraged to talk about them.
- **Comparing:** Looking at collections of objects: size, colour, weight (heavier, lighter), things that fit into one another – nesting dolls, etc.
- **Investigating and asking questions:** Why did the pebble sink? Where do snails live? Why is food frozen? Etc.

What are some exemplar activities that I can try out with my child?

Normal activities at home are a rich source of scientific inquiry. You are probably engaging in these already. But how can you turn them into a scientific inquiry?

Activity
<p>Experiences with water at bath time: bath toys (ducks, boats, sponges, bath soap, pebbles etc.)</p> <ul style="list-style-type: none">• Why do some things float or sink?• Capacity: Why do some containers hold more or less water? Which is bigger/smaller?• Bubble bath, hot or cold water, prevention of scalding etc.• Play with toys: vehicles such as cars, tractors, fire engines, trains, other toys with wheels, mechanical toys, battery-operated toys etc. Which car goes faster on a slope? What would happen if the slope was steeper? How can you stop a car on a slope?• Why do some balls bounce higher than the others? Let us find out.• Why do some things roll etc.? <p>In the garden:</p> <ul style="list-style-type: none">• Go outside with your child in the early afternoon (around 12pm), and observe your shadows. Is your shadow long or short? Compare this with shadows in the evening. What is different about your shadows?<ul style="list-style-type: none">○ Shadows change length and shape between when the sun is at its highest position at midday and sets in the evening. <p>Before bed:</p> <ul style="list-style-type: none">• Stars in the sky – spotting constellations e.g. look for a person in the sky for Orion
<p>Kitchen activities</p> <ul style="list-style-type: none">• What happens to sugar when you mix it with water?• Observing wet and dry things, mixing, stirring, kneading and rolling dough etc.• What happens when you cook things? Eggs for example (liquid and solid). What happens to water when you freeze it?
<p>Kitchen and garden activities</p> <ul style="list-style-type: none">• Fruits and vegetables: Which taste sour or sweet? Which ones do you like best? Reasons for your choices.• Feely Bag full of assorted things: ball, duck, car, spoon, soft toy, cup, apple, orange, shell etc. Children can place their hand in, feel the object and describe it



Activity

- In the garden: look at insects, plants, flowers, leaves, colours, shapes, etc. Have fun and talk to your children about them
- What birds and insects are in the garden and/or in green spaces nearby?
- Ants like sweet things to eat. Put some jam on a plate in the garden near an ants nest. When one ant finds this, it might go to tell it's colony about it. How long does it take?
- Worms have hairs underneath their body to help them move. Put a worm on a piece of paper and you might hear the hairs as the worm moves!

What can you see around you?

- Use opportunities whilst walking along streets for observing different buildings, structures, materials, displays, patterns etc.
- Marble floors in a bathroom: what patterns can you see? What colours are there?
- Kitchen tabletops: Can you see smaller shapes hiding inside the big solid shape in your tabletop? These are minerals!
- Share children's books on the natural world:
 - Did the animals, plants, birds, insects and sea creatures that we see today exist millions of years ago?
- Go to museums and galleries to look at fossils and rocks
- Depending on where you live, there might be local places to go fossil hunting nearby, including at the beach. Take a magnifying glass, and don't forget to wear sensible shoes and take small cloth bags for your new fossils.
- Why should we recycle?
- Using alternatives to plastic e.g. paper straws