Using Drama to learn Science : A Thematic approach : Toys

(Materials and their properties as well as Physical processes)

Strategy	Description of Strategy	Key learning objectives	Possible activities	Suggestions for question starters
1. Modelling	Modelling is a way of physically creating a model of an object and exploring how it works/ acts.	To develop understanding of the influences of forces on toys and their subsequent movements	Encourage the children to act out these ideas: You are playing with your toy car at home – you make it move forward – what do you do? Your mum picks you up from school, the car breaks down – you have to get it off the road so no-one bumps into it– what do you do? What is the difference between the two pushes (your toy car and the real car)? Now stroke a kitten, what force are you using? Now stroke the fur backwards – what other force is acting? Now act these out….knock down a building, pull up your socks, pull a bus. What forces are you using? (big and small pushes and pulls). Imagine you have a big toy truck – you can put Miss X's rabbit in – how different is it to move the truck with and without the rabbit? Close your eyes – you are chewing a big toffee – what happens why? What forces are being used? Imagine you are in the park on your skateboard, you are going fast – someone suddenly walks in front of you – you have stop immediately – what do you do? What forces are at work? If you were a teenager would it make a difference to how fast you might go or the time taken to stop on the skateboard? Why? (heavier bigger push; heavier slower to stop) You got ready for school this morning – put your hat on – you go out side for break. Its windy – what will happen to your hat? What should you do? What force moving hat? What force keeping it on? (wind = a push) Teacher stands in centre of room tells children to move quickly towards her - What am I ?– you are being pulled toward me (magnet) ? What are you? What could you be?	What do they think.. ? What might it be? Why do you think..? Is it... or..? Can they describe where….? How do they know?

			(these ideas courtesy of Ruth Scott, St John's Primary school, Keele, Staffordshire)	
2. On the table	Examining objects (often unusual or to be used in an unusual way) Group/s are presented with an object under the Easicope/ Digital microscope/ Visualiser The teacher models open questions –what could it be? Why is it that colour? I wonder what it might be used for? Another approach is to ask each child to reflect and prepare a shared thought : "I wonder if…..because….."	To explore objects, to speculate and evaluate evidence to identify objects. To observe and listen carefully. To take turns and share ideas.	The slow reveal works well with many toys. The object can be obscured from view by a large black cloth or in a box. Moving the magnifier slowly over skates or an unusual toy vehicle can encourage many imaginative suggestions.	What could it…? What might it..? What do you think? Do you think..? What do other people think? How could we …?
3. Spontaneous role play.	In small groups children develop arguments about science in everyday life. By working 'in role' they can explore views and ideas which may be different from their own.	To explore ideas and possibilities about what toys are appropriate for differently aged children. Safety of toys for children with disabilities. To take turns.	Groups act out a discussion (perhaps between a parent, older and younger sibling) and have to agree what toy they should buy (or not) for different family members' or friends birthdays.	What might they..? How would they..? What else might they..? Should we…? What might happen if..? Why do you think…?
3. Miming movement (1)	Using audio and/ or visual stimuli to support the children to imagine themselves in different places/ situations.	To explore and develop ideas on how things are used, how they work and/or move.	This is good to continue after the mind movie introduction because the children can be encouraged to be a wide variety of different toys as soon as midnight chimes. They could be : A clockwork mouse A racing car	How do you feel? Would you move fast or slow? How does what you are made of

	Group/s listen to a description/ sounds of a location. Whilst their eyes are shut the group/s can be asked questions about what they can hear/see so they can build up their own picture in their mind.		A balancing parrot A jack-in-the box A boomerang A drum set A puppets A wind-up toy Play-doh It is important after they have acted out being the different toys that reflective discussion brings out the key science ideas about why particular materials are used to make them and the forces that are needed to make them work.	affect you? How are you..?
4. Freeze frame.	A freeze-frame is a frozen moment. Group act out a phenomenon, on hearing a cue e.g. freeze, clap the group/ individual stops and holds their position. This allows the group to examine and reflect on what is happening at that moment.	To use bodies to enact and communicate about ideas. To explore ideas about how things work or move (e.g.: the jack-in-the-box, or spinning top or balancing parrot).	This is a continuation of the miming movement. The children can either be given unknown toys named on a card or they can be free to choose what they wish. In a carousel (in turn) each group can 'freeze' important moments of movement and the rest of the class can suggest and give reasons for the toy they think is being shown.	What is happening? How does it feel? What will you do? How will this help?
5. Hot seating.	Where teachers or children are placed 'in role' as experts to answer questions from their peers.	To explore problems and make reasoned decisions. To ask questions and listen carefully. To listen and respond appropriately.	The children can be hot seated in turn to share with the class what it was like being a particular toy. The children can be encouraged to develop questions themselves, and these can be shared and noted on the whiteboard, so everyone is given some thinking time before being placed in the hot seat.	How do you move/bend/go faster/slower….? Who would normally play with you? What are you normally made of? Why? What forces are needed to use you? Why?
6.Miming Movement (2)	Pairs/ groups/ individuals mime movement allowing	To explore and develop ideas on how things	This activity could be a simple as a ball (you can decide as teacher whether it is a hollow inflatable, a solid cricket or even	What can you see?

	them to explore different types/ ways of moving and how this might be affected by different circumstances.	change or move. To appreciate what forces are needed to use toys.	a tennis ball). The children can be asked to mime what they think happens in these situations : They, the ball, are dropped into the floor, then dropped into an empty bucket, then dropped into a bucket full of water…then the bucket is tipped over and stood up again, but this time they are dropped into a half full bucket. After each mime…..in turn (carousel-like) children can show their enactments to others. Sensitivity might be required so that children who do not understand when the ball with be buoyant and when it will sink do not feel awkward. As younger children may genuinely not know whether the ball floats or sinks, the teacher could respond by saying…."I'm not sure either, shall we try it out?". This response can then lead to practically exploring what happens if……	What does that tell you? What happens if..? What do you think is happening? Is it ../ or? Why do you think that?
7. Mini-historical play	The teacher tells the group a story –which could be scripted. During the story members of the group become the characters in the story – they could be given a prop/ costume item to signify who they are or a simple line to say. There might be moments in the story when whole groups are engaged or moments when they could offer their thoughts on the events of the story e.g. a meeting, Through this enacting the story is brought to life.	To familiarise themselves with scientists of the past. To develop observation skills and see how these Are important in the development of a scientific idea.	The story of William Harbutt is an appropriate narrative here. The children can enact him as an art teacher who wanted something better than clay for his students to learn how to model and sculpture things. He invented plasticine for his students by experimenting with different mixes of substances and 'drying' them in various ways. His children suggested he colour the plasticine and his eldest daughter became important in helping him develop his overseas business.	What did he do? Why do you think he..? What did he do that makes him remembered? How would he feel? How did he..? How might we find out? How did art help him to become a good scientist?
8. Mind Movies	Using audio and/ or visual stimuli to support the	To use a variety of senses to build up an	The scene is set for midnight in the toy shop by sounds of the clock chiming twelve times. The children can be told they are	What can you see/ hear/ smell?

	children to imagine themselves in different places/ situations. Group/s listen to a description/ sounds of a location. Whilst their eyes are shut the group/s can be asked questions about what they can hear/see so they can build up their own picture in their mind.	imaginary picture of a place.	a toy 'frozen' in a part of the store, and in twelve seconds time they will be magically freed from being a none-speaking none-moving toy. They will be able to move, but are reminded that they will be stiff from inactivity and perhaps what they are made of may mean they can not move easily.	Are they..? Which are… Why can you ..? What can you..? Are there any..? How do you know this place is like that? Is it …or..? How do you know?