

Dance through science – science through dance

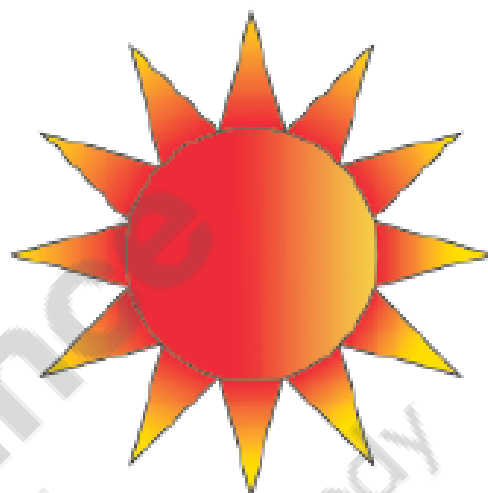
by Rachael Jefferson-Buchanan

INTRODUCTION

With a sprinkle of creativity and courage, experiencing science through dance and the application of science to dance are boundless. Although such cross-curricular possibilities can often be overlooked in primary education due to the National Curriculum's emphasis on traditional subjects, there is a growing body of research that confirms the positive effects of integrating academic concepts with practical movement experiences (Lengel & Kuczala, 2010). Within the resource below, three science topics will be explored in physical ways: 'light and dark', 'forces and motion', and 'materials and their properties'. Inevitably, links with other subjects will also become apparent. The ideas are written in no particular order and are not intended to be progressive; they merely comprise a mind-map of potential directions for fusing subjects such as dance and science together.

LIGHT AND DARK: NIGHT AND DAY

- Ask the children to share and discuss their perceptions of night and day. For example: What do they think happens to the sun, moon and stars during day/night time? What day/night creatures do they know? How do daylight hours change during the different seasons in the UK? Link this with relevant age-appropriate books, such as: the *In the Night Garden* series published by the BBC, *I Took the Moon for a Walk* by Carolyn Curtis and Alison Jay, *How to Catch a Star* by Oliver Jeffers, *Moon Talks* by Rina Singh and Debbie Lush, and *The Owl Who Was Afraid of the Dark* by Jill Tomlinson and Paul Howard.
- Guide the children in exploring vigorous gross motor actions used during the day (e.g. running, skipping, hopping, walking) and slower, softer night movements (e.g. different sleeping positions: curled, stretched, twisted).
- Use models to describe night and day. Involve the children kinaesthetically by asking them to act as the sun, moon and planet earth.
- Investigate the shapes of the sun, moon and the planet earth using plasticine or papier-mâché.
- Have the children make body shapes that represent the sun, moon and stars, joining them together with interesting travel actions that contain appropriate dynamics (e.g. light, flicking and dabbing qualities for the stars). These ideas can be performed individually and then developed into pair shapes that involve mirroring or canon.



FORCES AND MOTION: PUSH AND PULL

- Discuss forces and things we use during the day that involve their usage, particularly pushing and pulling (e.g. electric tin opener, toaster, bread maker).
- Organise a visit to the local park and review the forces at work in the playground equipment, e.g. swings, slide, climbing frame. Take photographs of the equipment and guide the children to review them back in the classroom. Ask them to try moving in similar ways to the playground equipment. How can they swing their arms and legs in different directions? How can they slide on different body parts? Can they 'climb' on different levels: horizontally, vertically?
- Have the children explore some traditional playground games that use different types of forces and motion, e.g. hopscotch, circle and clapping games. Ask them to abstract some of the key movements and develop them into short dance phrases, with or without voice accompaniment.
- Ask the children to sit opposite a partner with their knees bent and the soles of their respective feet touching. Holding hands, they pull each other gently back and forth from the waist singing the song 'Row, Row, Row your Boat' at the same time.
- Give out chiffon scarves and ask the children to explore forces using this prop, e.g. throwing (pushing up) and catching (pulling into body) in different body shapes such as sitting, kneeling and standing. In pairs, they can make a range of different shapes that involve counter tension (pulling away from each other), using the scarf and different body parts as the connecting material. Pushing movements can also be explored whilst in the various paired shapes, or these can be used as exits/entrances.

MATERIALS AND THEIR PROPERTIES: THE SENSES

Visual and tactile

Suggested resources: bubble wrap, felt, cardboard, plasticine, cling film, elastic, tissue paper.

Visual Guide the children to look carefully at the resources above and then mind-map words to describe the object's shape, texture and general qualities. They can find one still shape and one movement (travel, turn, jump or gesture) that represent some of the words chosen and then link these together.

Tactile Ask the children to close their eyes and feel one of the given objects. Have them describe how it feels to a partner and subsequently find a movement to represent tactile responses.

Auditory

Suggested resources: a range of percussion instruments, baked bean cans (full), empty margarine tubs, dried lentils/dried beans/uncooked rice, comb, paper, elastic bands.

Ask the children to make sounds using several of the resources above and then respond to these by moving on high and low levels according to the pitch of the sound. They can also improvise to the quality of the sound, e.g. vibratory (shake, quiver), flowing (smooth, sustained, curving) and percussive (jerky, stop and start). Ideas can be linked to make a short phrase of sounds and a movement sequence can be developed to go with this soundscape. Play the children a rhythmical sequence using percussion instruments and guide them to respond to the sounds they hear, e.g. light steps to the tapping of a drum, floating movements with arms spread to the sound of bells or a large jump accompanied by a cymbal noise.

Olfactory

Suggested resources: different types of scented items in unmarked containers, e.g. perfume, rosemary oil, lavender, cheese, charred wood.

Ask the children to close their eyes and smell the given items, thinking of movements that might represent them. Have them recreate these movements by improvising until interesting actions or shapes are found.

Taste

Suggested resources: word cards with 'sweet', 'sour', 'salty', 'bitter', 'spicy' written on them and/or foods that taste similar to these word cards, e.g. honey, lemon, baking powder, banana peel, curry sauce.

Have the children read the word cards and/or taste foods that are similar to these (as listed above). They can show reactions to these words/tastes through movement. How do the different words/tastes affect the movement vocabulary and qualities chosen? Have them share ideas with a partner and try to create a short duet with contrasting and complementary space, dynamics, and relationships.

Note

Before presenting children with substances to smell and taste you must check for any possible allergic reactions to the materials being used.

BIBLIOGRAPHY

Lengel, T. & Kuczala, M.S. (2010) *The Kinesthetic Classroom: Teaching and Learning through Movement*, Thousand Oaks, CA: Corwin

Rachael Jefferson-Buchanan is Senior Lecturer in Dance, PE, Education Studies & Primary Professional Practices at Bath Spa University