evolve

a creative movement manual for science teachers

a teaching manual promoting creative learning in science and the arts

tees valley arts

True science investigates and brings to human perception such truths and such knowledge as the people of a given time and society consider most important. Art transmits these truths from the region of perception.

Leo Nikolaevich Tolstoy

Contents

Introduction

This manual has been written by Tess Chaytor and Martin Wilson, both of TIN Productions.

TIN Productions is one of the leading dance development companies in the Northern region, working in partnership with individuals, arts agencies and organisations to create, plan and deliver creative dance and arts programmes to all regardless of age, gender and ability.

Both Tess and Martin have 10 years of experience leading innovative movement programmes in educational environments as well as INSET and training / mentoring programmes.

We have placed creative movement work in many cross-curricular areas including English, Maths and History. There are generic games and tasks we use frequently that can be easily adapted to support the delivery of key science vocabulary and processes. We encourage young people to find their own creative voice within movement and to feel empowered by the choice it can offer.

'…dance might not be what you think it is. Dance can be whatever you make it…'
Teacher (Beaumont Hill Special School)

We have also used this opportunity to write a manual to take time for ourselves to explore new ideas and devise new tasks or games that can be used in the delivery of science.

At the heart of what we do is the enjoyment of simply moving and being creative with movement. All of our games and tasks contain that essence so that all participants can enjoy the energy of a creative movement workshop whilst using the context of science as a ball park within which to play. We concentrate on the joy of movement but tied so closely to science that participants cannot help but take it all in,

'…by the time they rehearsed the dance, they had the science'
Teacher (Northgate Primary School)

It is an adaptable manual in that many of the tasks and games can be moved from their category and used at other times through a session. For example, a task that is recorded as an Introductory Task can also be used as a Core Technique or Closing activity.

We hope that you will find something in this manual that sparks your imagination to incorporate creative movement ideas to support deliver of your science curriculum.

We hope you enjoy using it as much as we did creating it.

'Once we got to the end of the project… we asked them (the participants) what have you got out of the project… a lot of them said that it helped them to remember words from their science lesson'
Teacher (Ayresome Primary School)

Aims

- To make the science personal
- To demystify scientific terminology and vocabulary
- To give students confidence in using scientific language and ideas
- To use different ways of learning, understanding and remembering
- To approach science in a variety of ways
- To use science as the basis for creating movement and kinaesthetic language

Methods

- Warm-ups for physical activity
- Games
- Teacher-led exercises
- Peer-to-peer tasks and exercises
- Creating moving images of diagrams
- Composing movement from scientific principles and ideas
- Introducing methods for developing and progressing movement
- Group creative activities
- Performance and sharing skills
- Using speaking and listening skills to enhance understanding of physical activity

Applications and Practicalities (How to use the handbook)

Health & Safety points when moving

- Wear loose comfortable clothing.
- Remove jewellery.
- Never chew gum or eat during a dance session.
- Never roll the head across the back.
- When rolling down the spine, only go as far as is comfortable.
- When bending the knees, make sure they go over the toes.
- When sitting with the soles of the feet together, do not hold onto or pull the ankles to stretch further.
- Never bounce when stretching, pulse only.
- Always try to sit with a straight back.
- When sitting and stretching to the side, always keep the sitting bones pressed to the floor.
- When sitting with your legs stretched out, always make sure the knees are facing to the ceiling.
- When turning always pick a spot on the wall to return to; this avoids becoming dizzy.
- When jumping always work through the foot and ankles to create a cushion.
- When landing a jump always bend the knees.
- If using music during / as part of the dance session make sure the sounds levels are not interrupting others nearby.
- If there is an element of 'creative response' to tasks within the session, allow for the class to be able to communicate as freely as possible. Again be aware of volume levels and who is working nearby.
- Always cool down after physical activities.

Structuring of a Session

Within a session, there are four key parts to work through:

Focus Activities

Tasks that introduce key vocabulary or movement ideas, brainstorm with the group, or just inform the teacher how much the participants already know about the subject area.

Example:
Introducing the Sun, Moon and Earth.

Introductory Activities

Taking the ideas that were worked on through the focus activities and putting them into a 'context'. It might be that there is a principle to be explained or an order / sequence involved, etc.

Example:
Working through a task that shares how the Sun, Moon and Earth relate to each other in terms of space.

Development Tasks

Time and space for exploring the ideas discussed in the Focus and Introductory tasks. It provides freedom for the participants to play with the science, and to learn through self-discovery, peer-to-peer learning or by bringing a theory or diagram to life!

Example:
Working in groups to explore how the three actually rotate around each other on a 24-hour basis. Can be purely experimental, where the participants are not given any information, or can be based upon three key facts shared by the teacher.

Closing Tasks

Time at the end of the session to evaluate and reflect upon learning / new knowledge gained through the session. Similar to Introducing tasks or even warm-up games, this section also provides the teacher with a chance to visually see who has learnt what.

Example:
A game as a whole group where if a key word is shouted (Sun) all must stand still and 'shine' with their arms spread. Movements can be set for the Moon and Earth.

Cross-curricular Application

In addition to non-physical skills such as team building and communication, dance activities can use any subject / topic as the stimulus to create movement or to be the thread linking the activities together.

Even though the chosen subject is science and therefore the topic would be science related, other subjects / topics can easily be added in.

For e.g. if the human body is being studied in science – as we learn the anatomical names of the bones we can learn the body parts in French. This could be given as homework.

Or, through using the game *'lucky dip'* the objects being pulled out of the hat could be coloured shapes or prime number etc. to link to maths.

Non-curricular Application

TIN Productions truly believe that dance can offer fun, innovative ways to express and communicate, interact and educate, create and perform.

Creative movement sessions:

- **Promote participation in dance for all.**
- **Promote Social & Physical benefits of dance.**
- **Create opportunities to learn new skills and gain knowledge through dance.**
- **Create and develop a safe environment for young people to express and empower themselves through contemporary dance.**
- **Give young people the opportunity to engage in new arts activity.**
- **Give the opportunity to create a forum for discussion and social interaction.**

Dance is a social, cultural and artistic activity; it is created, performed and appreciated by all ages, abilities and cultures. As a physical activity dance combines thinking, feeling and doing. It is unique in its ability to express meaning and communicate through movement, and provides alternative routes to learning about oneself, others and the world.

Key Materials / Useful Information

Music ideas for dance

When choosing music for dance, think about:

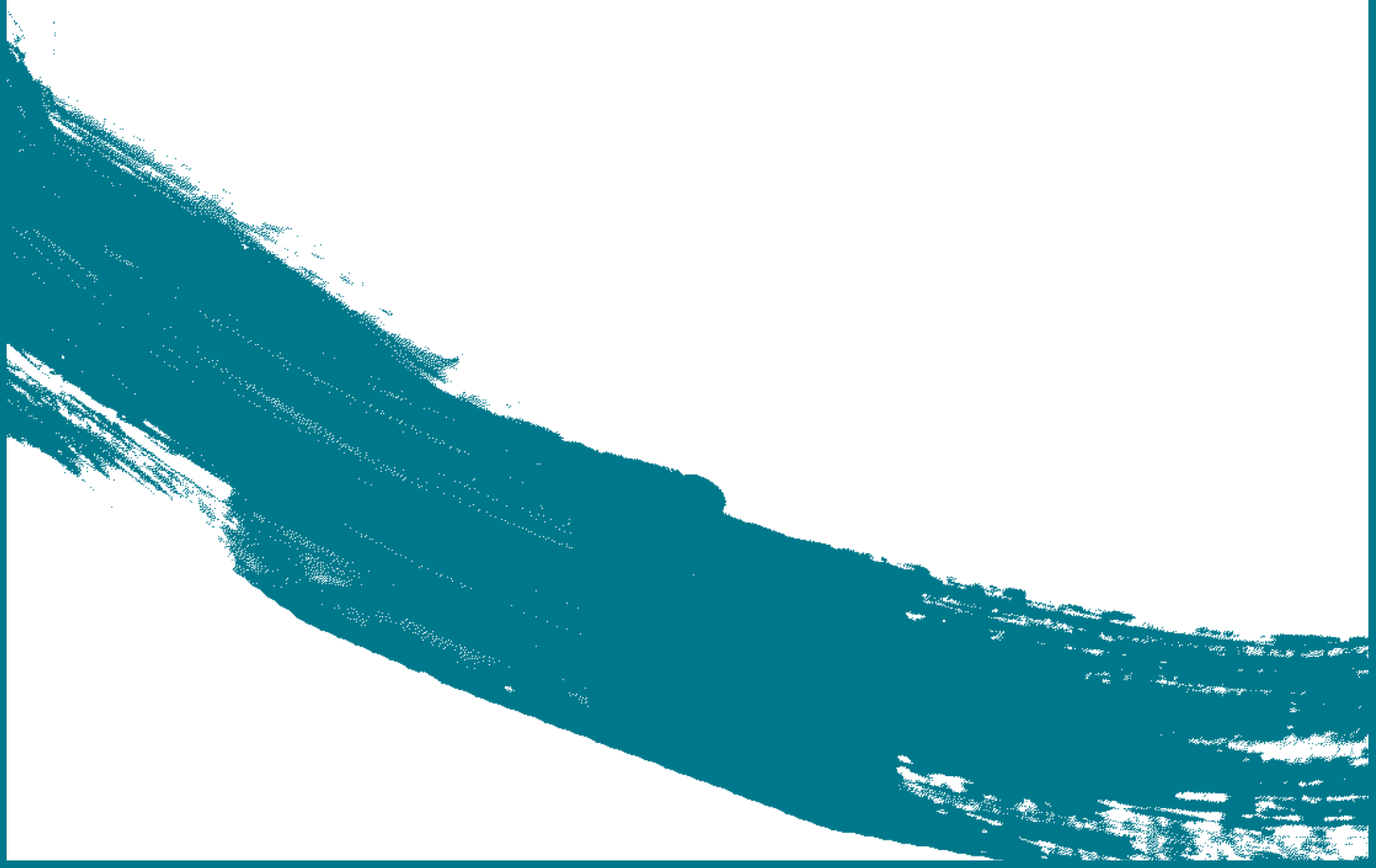
1. **What types of music do you want for warm-ups or creative tasks?**
2. **Do you want it to be lively, peaceful, melodic, or rhythmical?**
3. **What music is good for the background whilst everyone is working on small group or individual tasks?**
4. **Should I use music that portrays a mood or feeling?**

Try to avoid…

Popular music that will distract young people or encourage them to sing along. Also avoid music with words that you have not heard fully yourself… language might get very blue when you were least expecting it!

Do think about…

The age of your students and play around with the volume levels of the music dependent upon what the participants are doing. For example, if they are working in pairs and need to communicate, then music should be present but quiet. If they are doing energetic individual tasks then the music could be quite driving and slightly louder.



Good sources of music include film soundtracks and trance / ambient music.

Listed below are artists / albums that we use regularly. One strong tip is to find something that you also enjoy as you may have to listen to it a lot!

Artist	Album
Röyksopp	Melody AM
DJ Shadow	Endtroducing...
Jon Kennedy	Jon Kennedy
Layo & Bushwacka	Night Works
St Germain	Tourist
Penguin Café Orchestra	Any of their albums (all v good)
UNKLE	Never Never Land
Cinematic Orchestra	Man With A Movie Camera
Blue States	Nothing Changes Under The Sun
RJD2	Deadringer
AIM	Cold Water Music
Psapp	Late Night Tales

Action vocabulary list

Vocabulary to help participants develop movement:

Turn	Elongate	Swivel	Crunch	Peel
Flat	Collapse	Lean	Perch	Glide
Rebound	Drop	Float	Shrink	Penetrate
Extend	Thrust	Entwine	Recoil	Pivot
Balance	Surround	Repel	Angular	Rounded
Avoid	Attract	Reveal	Slither	Point
Curl	Circle	Brush	Step	Bend / Plie
Cross	Rotate	Lunge	Stretch	Shrug
Swing	Shake	Lift	Throw	Tilt

Quality vocabulary list

Vocabulary to help participants explore quality of movement:

Dull	Low	High	Short	Slow
Long	Sharp	Hard	Soft	Quietly
Loudly	Quickly	Jagged	Smoothly	Fluidly

A – Focus Activities

All of these activities (which can sometimes be called games) could be played at the start of the session. They are straightforward and may be led by a teacher or participant.

The tasks can also be expanded to form the main part of a session or used as a closing activity.

The tasks should prepare the mind and body of the participants for movement as well as allowing you to gauge ability and any adjustments you may need to make to later parts of your lesson plan. Remember the more movement you are going to do through the session, the more vigorous your warm-up needs to be.

These activities can be used to introduce scientific vocabulary & terminology and allow the opportunity to use this language with confidence.

Listening and observation skills can be tested and improved. New, different methods of learning, understanding and remembering can be introduced.

1. 8 / 4 / 2 / 1
2. Guess Who?
3. Do this / Do that
4. Exercises in a Space
5. Shape The Space
6. Keep The Kettle Boiling
7. When I go to The Park
8. Commands
9. True or False
10. Meet & Greet

activity 1 8 / 4 / 2 / 1

Instructions

Everyone stands in a space in the room (the group can be in a circle). Everyone holds their right hand up and shakes it counting to 8. The sequence of shaking for counts of 8 is then repeated for the left hand, right foot, left foot, shoulders, hips, knees and whole body.

Once the series of 8 counts has been completed, the sequence of shaking parts of the body is repeated for 4 counts then 2 then 1 count.

Additions and variations

1 Participants can nominate their own parts of the body and in any order.

2 Can be any sequence of numbers (for example, 7 / 5 / 3 / 1.

3 Can be done in a circle with contact through hands. All participants stand in a circle facing right with hands on the shoulders of the person in front of them. For the first 8 counts they rub the shoulders of the person in front. The next 8 counts they switch 180 degrees to the shoulders of the person on their left, rub hands in front of the body in the middle for 8 and then rub their thighs for 8. Repeat the number sequence down to 1.

Science application

Numbers can be changed into words or letters. For example, the participants can spell the word 'Hydrogen' as they shake… HYDROGEN / HYDR / HY / H.

Tips

1 Rather than being 'out' the players count how many lives they lose in the course of the game. In this way, all the players are kept involved.

activity 2 Guess who?

Instructions

Participants stand in a circle. One participant, 'the guesser', leaves the room. One of the participants in the circle is chosen to lead the group. They must move (on the spot) continuously changing the movement as often as they like.

They may shake their hands above their head, wiggle their knees, nod their head, jump on the spot, circle a shoulder, etc.

The rest of the group have to follow the leader as closely as they can without directly looking at the leader. The guesser then stands in the centre of the circle and has three guesses as to who is leading the movement. Once the guesser has guessed correctly or incorrectly within the three guesses a new game starts with a new guesser and a new leader.

Additions and variations

1 You can adapt the game to explore speed of movement, circular movement, parts of the body, etc.

Science application

Other variations include using certain muscle groups such as inductors. The game can be changed to a two-part answer. For example who is leading and are they moving like a solid, liquid or gas?

activity 3 Do this / Do that

...if the teacher says do this then the group must copy. If the teacher says do that then no one should copy and they should continue doing this.

Instructions

Participants can stand in a circle or in a space in the room. The teacher leads the group in random movements. If the teacher says do this then the group must copy. If the teacher says do that then no one should copy and they should continue doing this.

Additions and variations

1 Can be played in silence with the movement dictating whether they should copy of not. For example, if a circular movement is shown then the group should copy, if a shake is shown then they should carry on circling.

Science application

The key words could be based on a topic, for example Physical change and Chemical reaction. If the teacher shouts out an object that is a result of a physical change then the participants copy. If the teacher shouts out an object that is the result of a chemical reaction, then the participants should carry on with the last movement that was a physical change.

Example:
Ice (physical change – copy); steam (physical change – copy); toast (chemical reaction – do not copy).

activity 4 Exercises in a space

Instructions

Everyone stands in space in the room facing the same direction. The teacher leads a set of exercises designed to warm up the body and introduce basic movement vocabulary, starting with the head and moving down the body.

The starting position for each exercise is called parallel position. Stand with straight legs, feet hips width apart and the toes pointing straight forward.

Isolate:

The head

Lift up return to centre, lower down, return to centre

Tilt right, return to centre, tilt left return to centre

The shoulders

One at time; lift up, return to centre, Push down, return to centre repeat 4 times
Repeat other side
Roll shoulders backwards repeat 4 times
Roll shoulders forwards repeat 4 times

Stretch:

Side Stretch

Stretch both arms out to the side at shoulder level.
Take right arm up and over the head and stretch towards the left side of the body.
Hold stretch for 4 counts
Return to centre.
Repeat with the left arm.

This can be repeated with the legs a little wider apart.

Side Lunges

A lunge is a stretch where one leg stretches and the other leg stays bent.

Step into the lunge on the right side. The right leg bends and the left remains on the spot in a stretch. (Make sure the toes are pointing forward at all times).

Return to the middle bend both knees (without taking the heels off the floor) and stretch both legs.

Repeat other side

Repeat first side again but this time replace the bend of two knees with a rise (take both heels off the floor – balance – then place the heels back onto the floor).

Repeat whole exercise adding in arm movements. (These can be a simple stretch in the direction of the lunge).

Stretch down on a diagonal towards where you are stepping.

On repeat with rise:

Stretch up on a diagonal towards where you are stepping.

Prepare to move:

Pulse & Jump

Standing in parallel position bend the knees and pulse 4 times.
Jump 4 times
Pulse 4 times
Jump 4 times

*Always remember when bending the knees, make sure they bend in the direction of toes, which should be pointing straight forward. Don't let knees roll in or out.

Additions and variations

1. Any set of exercises could be used for this type of activity as long as they are taught with health & safety points added in and are of a suitable level for the group.
2. You could add in walking around the room for a set number of counts in between each exercise so that the front is always different.

Science application

Naturally lends itself to any topic covering the human anatomy. Also topics such as forces can be introduced through this activity by use of language and interpretation into movement.

e.g. pull up the shoulder, push down the shoulder, tilt the head, rotate the arm etc.

activity 5 Shape the Space

Instructions

Participants sit in a circle. One person goes into the centre of the circle and poses in a shape which they can hold still.

It may be a balance on one leg with the arms stretched or a big upright star shape, for example. The next person in the circle comes into the circle and makes a shape around the first person exploring such ideas as placing arms, legs and head around, under, over, and through.

The first person leaves the circle leaving the second person on their own holding their new shape still. The next person around the circle enters and the game continues until everybody in the circle has been in the middle.

Additions and variations

1. An emphasis can be placed on trying to make it difficult for the first person to leave the circle by wrapping arms and legs around them as much as possible without touching them.
2. It can be done against the clock setting a time by which the game must have gone around the whole circle.

Science application

The orders can be changed to suit the subject. For example, when the sun is being studied, the game could be ‘Under the Sun / In the Shade’.

activity 6 Keep the Kettle Boiling

Instructions

The participants form a circle and lie down with toes pointing toward the centre of the circle.

The participants simply say alternatively ‘ tea, coffee, chocolate’ over and over again around the circle.

At any point the teacher can give the command ‘Keep the kettle boiling’ at which point the participants must stand up, turn around on the spot and lie back down and begin saying the words again.

Replace the words, ‘tea, coffee, chocolate’ with words or numbers related to your science theme.

For example if the theme was environmental pollution you could use the word chloroflurocarbon and split the word so that ‘tea, coffee, chocolate’ becomes ‘chloro, fluro, carbon’. The ‘keep the kettle boiling’ command becomes ‘environmental pollution’

A fun & silly game for a long strange word or a series of key words.

Additions and variations

1. Words and numbers could be replaced with movements. These movements could be developed through one of the core techniques.

Science application

Fun way to introduce new scientific vocabulary connected to just about any topic. It could be used to learn and remember scientific equations e.g. H_2O.

activity 7 When I Go to the Park

Instructions

Participants stand in a space. The teacher says 'When I go to the park I like to……' and adds a verb at the end of the sentence, for example, jump / spin / hop / swing / skip, etc.

The teacher shouts a key word to stop the activity like FREEZE, STOP, etc.

The teacher can then select a participant and ask them to choose the next word to fit at the end of the sentence. It can be repeated for as long as is necessary.

Additions and variations

1 The context can be changed. For example, When I go to the café I like to… When I go to school I like to… When I go to the beach I like to …

Science application

Again the context can be changed:
When I (insert verb) I use my (insert muscle group)

For example, when I walk I use my quadriceps; when I lift a brick I use my biceps

activity 8 Commands

Instructions

At the start of the task either

1 movements and key words are set by the teacher and shared with the group or

2 the words are shared and the participants set their own individual movement to perform every time they hear that key word.

Once the movement and words are set, the participants move around the room. The teacher calls out a key word and the participants perform the set movement for that key word. Once the movement has been performed the participants move off walking around the room again until the next key word is called out.

Example:

Key word	Movement
Sun	Arms form a circle in front of the body
Moon	Arms stretched above head and body curved
Star	Hands twinkle all around body
Earth	Jump to a heartbeat rhythm

Additions and variations

1 The teacher can also add in new words that aren't shared and set at the start of the task to add an improvisation element to get the participants thinking on their feet.

2 After playing the task a few times, the teacher can set the key words into an order and ask the participants to try to perform the set movement in the order of the key words without the teacher having to say each word.

Science application

If the next part of the session is going to involve further composition then this is a good task for getting the pupils' minds and bodies ready.

A process can be explored with key words pulled out. For example, the key words could be heart, squeeze, relax, and pump.

activity 9 True or False

...this can be used to test the participants' current level of knowledge and to implant key statements that will be explored later in the session.

Instructions

Participants stand in a circle. The leader makes statements connected to the topic. The group respond to the statement with one of three answers: True, False or Maybe.

If the participants believe the statement is True they respond by pushing their arms toward the ceiling and saying 'whoop whoop'. If they believe the answer is False then they swing their arms low crossing the front of their body and making the noise 'uh-uh' from the television programme Family Fortunes. For Maybe the participants stretch their arms out in front, shaking their fingers and humming mmm…

Additions and variations

1. The game can be played moving around the room.
2. The participants could give the statements.
3. The emphasis could be placed on the movements and the sound taken away.

Science application

This can be used to test the participants' current level of knowledge and to implant key statements that will be explored later in the session.

This task can be used as an assessment or reviewing tool.

activity 10 Meet & Greet

...hello, I'm an apple, I met a strawberry and spoke to a pear.

Instructions

Participants walk around the space. When they meet someone they should introduce themselves based upon the theme. If it was fruit they might say 'Hello, I'm an apple'. They should also choose a movement which best depicts a fruit and perform it as they introduce themselves. The second person then responds with another fruit, 'Hello, I'm a strawberry' and performs their movement.

The participants keep meeting a new person until everybody has met each other. An option is that the participants then show the teacher individually a short phrase of movement with the words 'Hello, I'm an apple, I met a strawberry and spoke to a pear'

Additions and variations

1. The second person can choose an object or a movement dependent upon how the first person introduces themselves. For example, an object that is bigger, smaller, similar size, related to the original object (bread – butter).
2. It can be done with movement alone.
3. It can be done with movement alone with the second person choosing their response as a direct result of the first person's movement. For example, do the opposite, transpose it to another part of the body or reverse it.

Science application

Participants could be set to introduce themselves as an object. The second person should respond by deciding what would happen to the first person if heat was applied.

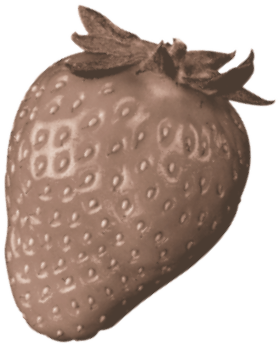
For example

1st person, bread – 2nd person, toast

1st person, water – 2nd person, steam

1st person, chair – 2nd person, fire!

Other topics of science can be introduced and it can help the teacher gauge how much the participants already know. For example, choose a planet and a quality of the planet as your action.



B – Introductory Activities

These activities / tasks are also very simple to follow. They can be led by a teacher or by a participant. They shed a little more light on a subject and by 'playing the game' the participants will inevitably learn more about the subject and begin to put it into context for themselves.

1 Physical Brainstorm
2 King of the jungle
3 Sculpture
4 Moving Image
5 Directed Tableaux
6 Key Words
7 Follow the leader
8 Name & Action
9 Lucky Dip
10 Video Control

activity 1 Physical Brainstorm

Instructions

The participants move around the space and the teacher asks 'open' questions. For example, Can any one show me how shooting stars move? What would ice look like melting? Act out an object that is a solid / liquid.

Additions and variations

1 Can be done as a reaction to key words within a text. The teacher reads the text aloud and the participants react to key words they pick up on.

For example,

How breathing is controlled
The air is moistened and warmed as it goes into the nose. The cells that line the back of the nose have cilia on them. Dirt is trapped by mucus secretion and then swept to the back of the mouth and swallowed down to the stomach where digestive acid largely destroys any bacteria (germs) in the mucus. This defence mechanism means that clean air generally enters the lungs. If humans work in very dirty conditions such as coal mines the cilia get overwhelmed and dirt is sometimes deposited in the lungs blackening them, so causing them to be weak and lose their elastic nature.

Science application

Can be used as above. This working method is very useful to gauge how much knowledge the pupils have of a certain subject at the start of the topic.

activity 2 King of the Jungle

Instructions

In groups of five each person is set an animal and a noise. Starting with the most important animal (Lion) they show their action and perform their noise and choose who to call to. They then perform the action and sound of the animal they have chosen (for example, frog). The animal that was chosen must recognise that the call was to them and perform their own action / sound and then pass it to another animal and so on. If a person makes a mistake they go to the bottom ranking and everybody else moves up one. The object of the game is to be the Lion who is the king of the jungle.

Order of Animals starting with most important:

Lion
(Arms circle forwards with hands – Roar!)

Giraffe
(two arms above the head stretched, hands open and close – munch, munch)

Snake
(Hands held together and move from stomach away from body – Sssss)

Frog
(Jump from crouched position – Ribbet)

Fly
(Arms make small wings and bottom wiggles – Bzzz).

Additions and variations

1 The game can be played with actions or sound only.

2 You can have a different number of people in the group and add or subtract animals.

3 The game can be played with any collection of things that can be put in a ranking order. For example, transport from biggest to smallest.

Science application

The game can be played with a topic of science that has either a number of things that can be ranked (for example, the planets) or the order of a process (for example, the pathway of blood around the body).

activity 3 Sculpture

Instructions

Normally this task is done in pairs. One participant stands in a star shape and stays still. Their partner faces them and has a set number of turns to change their star position into a new frozen sculpture by moving parts of their partner's body.

Within dance sessions it is a good game for introducing vocabulary that will be used in the session by instructing the partners to change the position by stretching a part of the body, curving…, tilting…, etc.

Once one person has had a go they swap over.

Additions and Variations

1. The participant changes their partner's shape by blowing gently or strongly.
2. The participant changes their partner's shape vocally with instructions and never touches.
3. The participant changes their partner's shape by showing / demonstrating.
4. The pairs start at one end of the room and as they change their partner's shape they try to also move them down the room with the movements they choose.

Science application

This is a good task for exploring words that have motion or a physical sense.

In forces you could use push, pull, etc. In Planets you could look at rotate, swivel, spin, etc.

activity 4 Moving Image

Instructions

Split the group into small teams. Give either a photocopy of the chosen image or explain to the group what the image consists of.

Ask each team to bring the diagram / image to life taking it from a two dimensional image to a three dimensional image.

The group should start with a static image that is 3D. The teacher then feeds in key movement ideas that can be related to the topic or can be purely movement based, such as turning, rolling, tilting, etc.

The group should start to make the image move with an expressive sense of movement. Encourage the group to play with the size and speed of the movement.

For example the image may be of the sun, earth and moon with arrows indicating what rotates/ orbits, in which direction and around what. The participants must become the sun, the earth and the moon, show the relationships between them and the pathways taken.

This is a good task for getting participants to explore a theory in a physical sense helping them to understand and retain this information.

Additions and variations

1. You may wish to explain the whole image/ process in the classroom and then get the participants to bring the image to life in a 3D space. Or you may wish to tell the participants a little information at the start of the task to see how much they already know; feeding in more information to let the participants build it up through trial and error, testing different ideas and hypotheses.

Science application

This activity lends itself to many different areas of science from how the heart squeezes and relaxes to how different molecules diffuse when released into the same atmosphere.

This activity is also very effective at exploring journeys / process. For example following the journey of the blood from the heart and around the body.

activity 5 Directed Tableaux

...simple ideas of science can be very easily 'depicted' through this task. With changing states you could look at ice melting, water boiling, water freezing.

Instructions

This game is lead by the teacher although participants can take turns in being the leader.

The participants walk around the room, in and out of each other, looking for spaces to walk into and trying not to be too close to anyone else.

The first command they are listening for is a number. This number indicates how many people are required to form sub groups.

The second command is an object that the sub groups must depict by either forming a frozen image (photograph) of that object or by relaying some information / facts already discussed by the group with the teacher when preparing for the game.

For example the subject may be solid / liquid/ gas and the tableaux / depiction must show what the bonds are like holding the particles together in each object. These images are best set by the teacher so the participants' answers can quickly be translated.

Number in group	Object	Solid / Liquid / Gas
3	orange juice	liquid
5	brick	solid
10	water	liquid
4	air freshener	gas
7	ice	solid
2	helium	gas
1	banana	solid

Once the sub groups are formed and the answers given the teacher gives the command 'walk' and the group begin the process again.

Additions and variations

1 Instead of simply walking the teacher can give different ways of moving for example running, hopping, rolling, turning.

You do not need to give a number, you may simply spilt the group into teams which they return to in order to depict their image.

Science application

Simple ideas of science can be very easily 'depicted' through this task.

With changing states you could look at ice melting, water boiling, water freezing etc.

You could add to the tableau and ask the participants to show what is making the ice melt or the water boil.

activity 6 Key Words

Instructions

The participants stand in a space in the room. The leader calls out key words related to the theme. The participants respond by showing an action / movement to represent each word. The leader chooses one of the participants' responses and the rest of the group learn this movement and use whenever the word is repeated.

This activity can help participants explore key words in terms of meaning, sound, quality etc.

Science application

This activity can be used to introduce related words to any science topic. It is particularly good for groupings of words, for example the five key elements of an organism.

activity 7 Follow the Leader

Instructions

This activity works best in pairs or small teams. Each person in a pair / team take turns leading movement for the rest to copy. There are many areas that can be explored through this activity. For example energy, (small / big, fast / slow), animal movements, pathways such as circular or jagged etc.

Additions and variations

1 The followers do not have to copy the movement but respond in a set way, for example mirroring.

Science application

Good to use where there is a cause and effect, for example the producer and consumer in habitats.

activity 8 Name & Action

Instructions

Standing in a circle, one participant at a time says their name and shows an action. This is repeated around the circle until all participants have shared their name and one action.

Additions and variations

1 Accumulate the Name & Actions to build a series of movements. The first participant shows their name & action; the second does the first persons and their own; the third person does the first and second persons and their own.

2 Use the names and / or actions to pass from one person to another. For example, Brian shows his head nod and then does Sandra's arm shake. It passes to Sandra. Sandra does her handshake and performs Tom's jump. It passes to Tom. Tom does his jump and does Emma's leg swing, etc.

3 The circle is broken up into smaller groups and they learn each other's movements and perform short phrases back to the group.

Science application

Each persons' name could be swapped for a planet, and they show a movement related to the qualities pertaining to the named planet.

Each person could take on an element from the periodic table and when saying name actually state the symbol with the action. When the 'passing' version of the game is played, the person sending should name the symbol whilst performing the action, and the person receiving should state the full name whilst performing the action.

activity 9 Lucky Dip

Instructions

For this activity you will need some sort of holder, a list of instructions and a collection of small coloured 2D shapes.

Place the coloured shapes into the holder. Standing in a circle the participants take turn to draw a shape out of the holder.

The shape relates to an instruction on the instruction sheet that the participant must then perform.

The basic version of the game could use four shapes in four colours each, therefore sixteen shapes in total.

Instructions can range from simple movements such as circle your right arm to more difficult tasks such as find three parts of the body that rotate on a horizontal plane.

Additions and variations

1. Coloured shapes could be replaced with numbers. The game can be played in small teams.

2. The leader can hand the instruction to that participant and the rest of the group must guess what the original instruction was as the participant performs it.

Science application

This activity could be used to explore various aspects of the human anatomy.

activity 10 Video Control

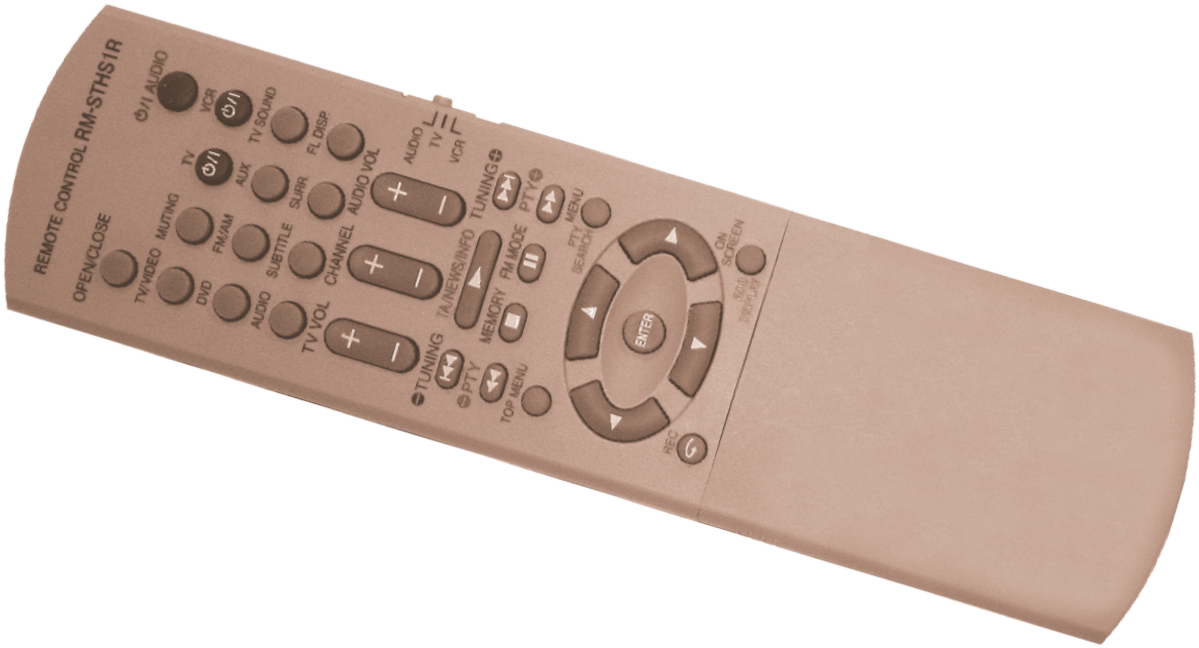
Instructions

The group is divided into small teams. The leader gives them a process to explore such as ice melting. The group have 30 seconds only to create a piece of movement to show ice melting.

The leader then uses Video Control terms to set the teams moving through their ideas. Starting with PLAY, the leader can then use FAST FORWARD, REWIND, PAUSE, SLOW MOTION, FRAME BY FRAME.

Science application

Any process within science can be used, such as chemicals mixing, objects moving, etc. This game helps participants to slow down and break up processes through movement, and if you continue to PLAY you can lead the participants to guess what would happen next?



C – Development Through Core Techniques

These activities are used to explore the science in more detail. It is at this point in the lesson where you can choose how involved in the 'dance' to become.

Each activity or task is designed to allow the teacher to take a step back and from the group, giving the participants the opportunity to decide how to interpret the task and how to include the vital scientific facts. The teacher can step back into the action to add in more detail as and when appropriate.

It is good to split the group into small teams as each team will have a different interpretation of the task and the groups learn from each other.

If you wish to create a dance piece for sharing / performance, it is through these techniques that work can be developed.

The first five techniques are compositional – tools for creating movement

The second five techniques are developmental – tools for taking created movement and changing it to enhance it.

Compositional

1. **Worksheets (key words)**
2. **Moving Images On**
3. **Accumulation / Consequence**
4. **Journeys**
5. **Sequencing**

Developmental

6. **Speed**
7. **Level**
8. **Unison / Canon / Repetition**
9. **Transposing**
10. **Expanding / Shrinking**

Worksheets (Key Words Development)

Instructions

This activity is a good development method for 'Key Words'. After introducing new vocabulary through the 'key words' game, you can split the group into small teams, and by giving the same words or a related information in the form of a worksheet, the small teams can make their own interpretation and create new movement, or develop what was explored by the whole group.

Example:

Key words

Mercury Venus Earth Mars Jupiter Saturn Uranus Neptune Pluto

Worksheet Development

Terrestrial Planets: Mercury, Venus, Earth, and Mars

Are composed primarily of rock and metal, have high densities, slow rotation, solid surfaces, no rings and few satellites

Gas Planets:
Jupiter, Saturn, Uranus, and Neptune

Are composed primarily of hydrogen and helium and generally have low-density rapid rotation, deep atmospheres, rings and lots of satellites. Split the group into four teams. Give two teams a worksheet with the information about Terrestrial Planets and the other two teams a worksheet on Gas Planets.

You could choose whether or not to include the names of the gas / terrestrial planets on their worksheets. This could be part of the task – to identify what planets are in each grouping.

The participants then decide which planets they need to include in their movement based answer. They could use the movements explored in 'key words' for their relevant planets and create new movements to represent the characteristics the planets in this group share.

Once the group are happy with their compositions this would be a good opportunity to share their work, each small team taking their turn to perform for each other. This can be a good learning tool for both the performer and audience.

After each team has performed or at the end of all four performances, a discussion based on what information they received, their interpretation of this information and new information could be introduced. For example 'why Pluto is not included in either the terrestrial or gas planets'.

Science application

This activity can be used for just about any topic. It is a good way to get a group to read relevant information and to open up a discussion.

Moving Images On

Instructions

This activity is best used as a direct development of 'Moving Image'. Once the group are armed with some information from 'Moving Image', or from a classroom source; they can be taken onto the next stage and inject more detail into their animated diagram. The development task may be some sort of investigation based on the facts the group already know.

Example:

Moving Image

In small teams the group have studied the earth, moon and sun; and how they rotate around each other. They have tried this in a physical sense.

Moving images on

Through discussion and the use of more diagrams the 'ozone layer' and the reason(s) for being there are introduced.

The group, still working in their small teams; are given enough information from the teacher to understand and put into movement the idea of the earth being surrounded by the ozone layer. More detail / information can be added by the teacher as and when appropriate to build their diagram and understanding of this concept.

The group could show the presence of the ozone layer and how the three types of UV rays from the sun (A, B & C) enter or are absorbed by the ozone layer.

An investigation could be set – what would be the effects on earth if there were no ozone layer. This is firstly discussed in their small teams and then once they have reached their conclusion they show their answer through a moving image / journey, each small team taking their turn to perform for each other.

This can be a good learning tool for both the performer and audience.

After each team has performed or at the end of all four performances, a discussion based on what information they received, their interpretation of this information and new information could be introduced. For example, 'the hole in the ozone layer and how we could repair this damage.'

Science application

This task works well in many different areas of science. It is a good method to teach the group how to interpret diagrams and how to present key factors of information in a non written format.

Accumulation / Consequence

Instructions

A simple compositional task, accumulation means to add on one movement at a time.

Participants either individually, in pairs or small groups, create their first movement and stop. They then repeat the first movement and go on to create their second movement. They then repeat their first movement, second movement and create their third movement. This order is repeated up until a set number. This sequence is also how the phrase should be shared when it is finished.

Slightly more difficult, Consequence is different in that this task works best in pairs and cannot be done individually. This time when one participant creates their first move, their partner creates their first move as a consequence or reaction to their partners first move.

They then repeat the first moves and go on to create the second move. Consequence is much more exploratory in that you can only make movements that are linked to another persons' and therefore this task needs careful observation and brings in problem solving skills.

Science Application

For accumulation, the participants can explore a set order already pre-determined (for example, ascending in size of mammals with the mammals listed on a sheet) or can be given the first thing and asked to add on up to a given point (for example, start with a weak conductor and gradually add onto until you come to one of the strongest conductors).

Journeys

Instructions

Ideally in teams, the participants are set the task of showing a process happening over a defined period of time. There are no rules set as such and the team members can interchange their roles as appropriate.

The teams are encouraged to add as much detail as possible but should also be able to share back what they have created without talking to each other. Sounds can be added if this helps the group get in to the task.

Additions and variations

1 This can be done individually, in pairs or in small teams. If you want to explore a long process it can be helpful to break it down into several stages.

Science application

Most processes can be put into a journey. An example could be for a team to show water being placed in a container, then put in the freezer. What happens to the water and what would happen if you then removed the container from the freezer and tipped the contents out.

Sequencing

Instructions

Sequencing explores creating a phrase with a sequence to be followed or translated into movement. Simple sequences can involve everyday tasks – getting up in the morning, travelling to school, etc. Sequencing can also follow set orders such as the letters of the alphabet, primary numbers, etc. Unlike Accumulation, each movement is not repeated and is only done once in the sequence.

Sequencing is an ideal way to help a participant to kinaesthetically remember a set order and store it physically as well as mentally.

Science application

An example of a set sequence is the order of planets starting with the closest to the sun:

- **Mercury (closest to the sun –hot planet) is a movement with your head as when you are hot this is where you feel it most and is also the highest part of your body.**
- **Venus (2nd planet) is a movement where your hands touch your lips as Venus is the goddess of love and the movement is descending down your body.**
- **Earth (3rd planet) moves your hands to your heart as it is the only planet we can survive on and our heart keeps us alive. We also continue to descend the body.**
- **Mars (4th planet) is a movement with your ribs as mars has two moons and your ribs are the shape of two crescents.**
- **…continue through the nine planets.**

How much information the leader gives can vary. The detail above can be on a worksheet (for example) or to test the participants, knowledge the leader may just say 'Starting with the top of your body, work through the nine planets right down to your (plu)toe!'

Speed

Instructions

Making movement faster or slower. Can be the whole phrase of movement or individual parts.

Level

Instructions

Changing the level of a movement. There are five levels in movement: On the Floor – Low – Medium – High – Off the floor. Any movement can be changed from one to the other. For example a turn that is low could be put Onto the Floor (a roll) or Off the Floor (jumping turn).

Unison / Canon / Repetition

Instructions

Often used to add variety to a phrase of movement performed by a group:

Unison
when all participants perform the phrase identically at the same time.

Canon
When participants split movements up and stagger when they start so that it appears like a Mexican Wave of movement.

Repetition
When a movement is repeated either immediately or later on in a phrase.

Transposing

Instructions

Changing the body part that performs a movement. For example, an arm stretching away from the body can be changed to a leg stretching away from the body.

Expanding / Shrinking

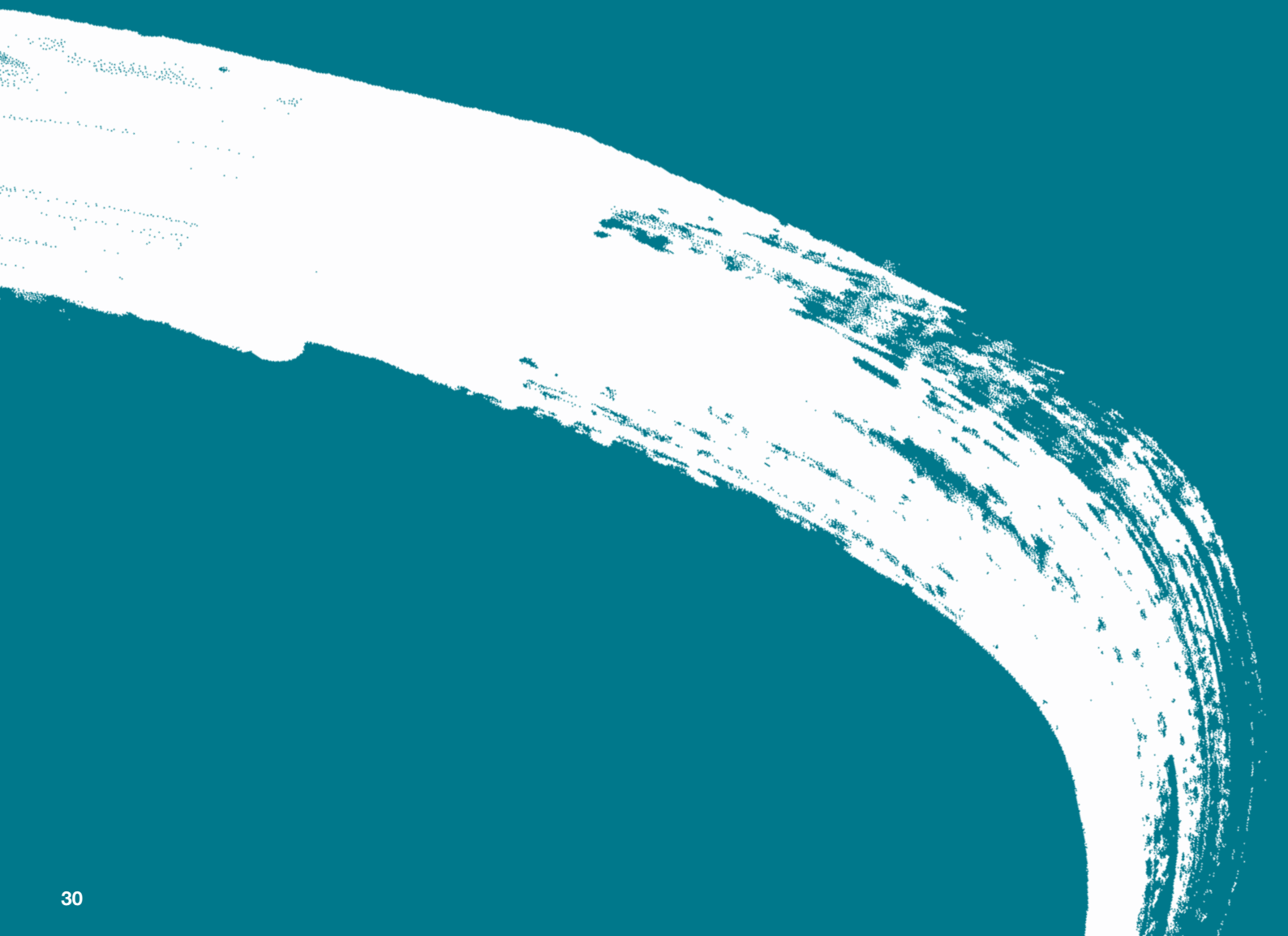
Instructions

Making a movement bigger or smaller.

D – Closings

These activities reinforce the learning from the session, bring a group back together if you have been working in small teams, cool down the body if you have worked physically hard, or it may be the opportunity to share information and movement ideas.

Closing activities allow the teacher to assess how much a group has learnt; where the starting point for next session should be; find out more about individuals in a personal way other than academic.



activity 1 Sticky Colours

Instructions

Participants stand in a space. They are asked to move around the space by walking / running/ hopping / skipping, etc.

The teacher shouts a colour. All those wearing that colour have to stop and stand in a star shape with arms and legs stretched.

Those not wearing the colour move to touch one person in a star shape. The result is small clusters throughout the space.

The group is given a new way of moving and then another colour is announced. The game continues until necessary.

Additions and variations

1 It does not have to be a colour that is called. It can be a letter, if the letter is in your name make a star shape. It can be pertaining to information about the group to act as a research exercise, for example right-handed, blue eyes, two brothers.

2 Those who aren't making the star shape don't have to touch the stars. They could point, stretch towards, or stick their tongue out at them!

Science application

The game can act as a test of knowledge.

1 Colours of the rainbow. If a colour of the rainbow is shouted out then anyone wearing that colour should make a star shape, all others should touch. If the colour shouted out is not one of the colours of the rainbow then no one should stop.

2 The game can also be played with questions that have a TRUE / FALSE question.

If the participants believe the answer is TRUE they have make a star shape, FALSE touch the person making the star shape.

activity 2 Space Finder

Instructions

All the participants stand in a circle connected all the way round by hands, elbows, feet, etc. There is also one participant stood in the middle. The basic principle of the game is similar to Fruit Salad. The participants are sequentially given one of three labels around the circle (example, apple – pear – orange). The group are also told the one word that links them all (example – fruit). In this game, however, the game is then based on descriptions that describe the key word assigned to each person.

The descriptions should of been covered earlier in a session and can be as simple or as difficult as the person in the middle chooses to make it.

Example:
Key words:
Mars – Earth – Jupiter = Solar System

Descriptions:
The planet with two moons
The planet between Mars and Saturn

Additions and variations

1 Can be played with movements instead of words.

Science application

The words can be from any topic with one key word to link them all.

activity 3 Code Breaker

Instructions

The game is played in a circle with the teacher standing in the middle. It is a game that is hard to repeat with the same group in consecutive sessions as they will start to work out how to play it so it is an advantage to get it right first time!

The teacher explains that every participant in the circle has to show back exactly to the teacher a simple series of movements that will be first performed by the teacher. For example, the teacher may touch their head with both hands, bend their knees and then shake their fingers.

Each participant then, one at a time, shows back the series of movements to the teacher. If they get the series right the teacher simply asks them to remain standing. If the participant does not show the sequence back correctly then they should sit down.

The aim is to see how many of the group can correctly show back the movements in the right order and remain standing.

The Code Breaker element is the real trick in the game! Just before the teacher shows the series of movements to be learnt the teacher says 'Are we all ready, OK here we go…' or similar words to the effect. They then do something very small and subtle like rub their hands, touch their nose, even look at the ceiling momentarily as if thinking!

Then the series of movements is shown. See how many include the small incidental movement that happened at the start.

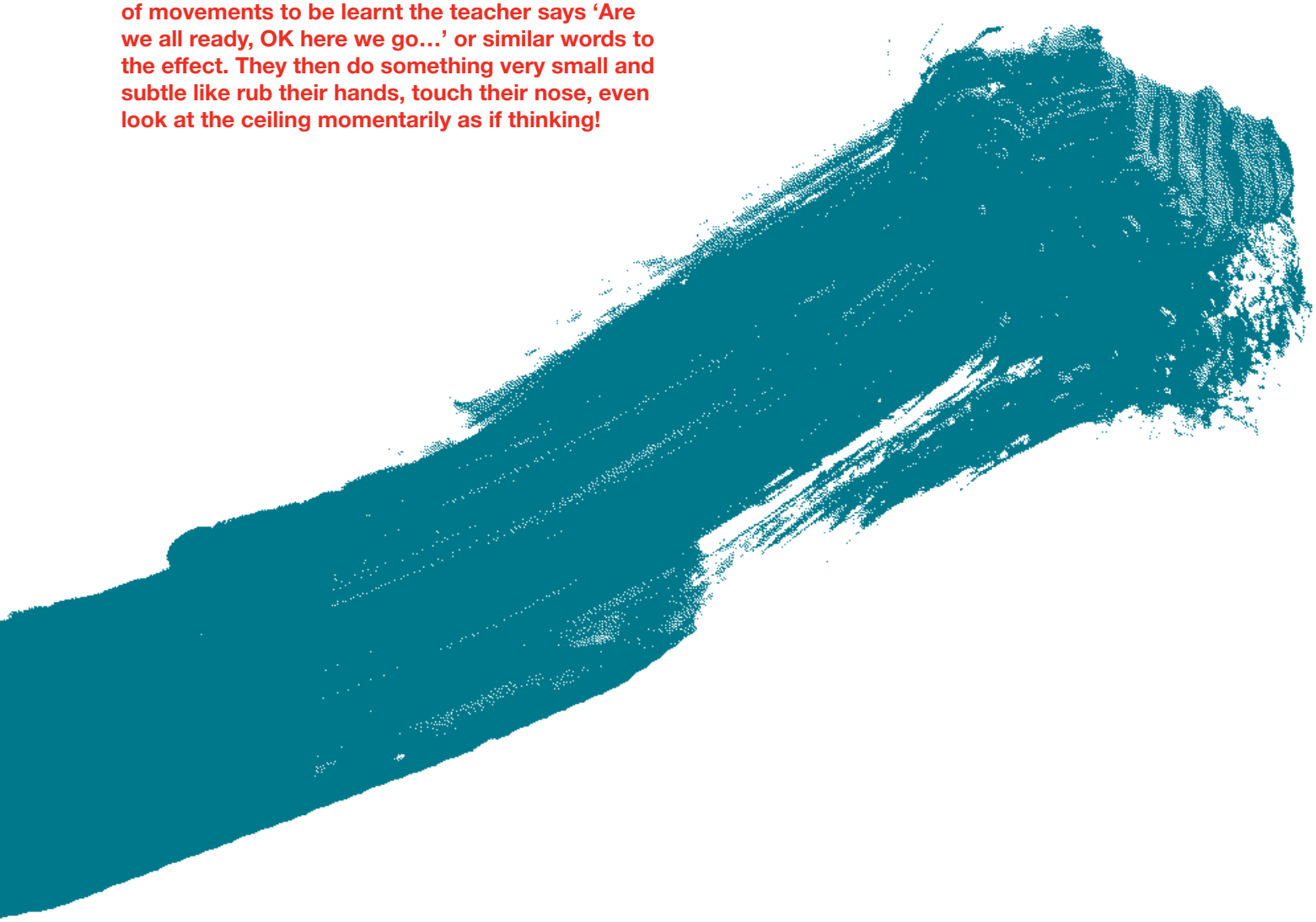
If no-one spots the incidental part of the code and every participant is sat down confused because they repeated the series and thought they were right, don't give the secret away. Keep them guessing until the next session and see if anyone spots it then!

Additions and variations

1 The code can be added at any point, for example, at the end of the series of movements.

Science application

It is a nice fun way to end a session but more importantly, does work on observation skills and reminds participants to observe closely and to look in unusual places for where the answer could be. It can also be used as an opening activity.



activity 4 The Usual Suspects

Instructions

Each participant is given a number that is stuck to their back so they can't see it. Every person then has to move around the room but no one is allowed to talk. Each person must look at the numbers on the back of other people and greet them in an appropriate manner with 1 being the most important and the highest number being the least important. For example, if 10 people were playing they may bow to number 1, nod their head to number 5 and completely ignore number 10 or look in disdain.

After four minutes the group must line up with the person who believes they might be number 1 to the most left and the person who believes they are number 10 to the most right with all others in-between in what they believe is the correct order.

The teacher then reveals the numbers so all can find out who has found their correct position.

Additions and variations

1. The game can be played vocally with participants talking to each other and addressing each other with appropriate respect or abruptness!

Science application

There are a number of different topics to be explored:

1. The names of the planets can be put on the backs if there are nine players.
2. With 14 players or less, numbers from the pH scale can be used.
3. For food science, foods can be listed in relation to sweetness / spice.
4. Animals is an easy science topic looking at size of animal, working through the classes, longevity etc.

activity 5 Sharing of Compositions

Instructions

As the title suggests, one closing activity is simply to watch what each group has created over the course of the session. It is important for participants to be able to observe and evaluate as well as do in performing arts so this is a valid, important activity. Participants often feel that their work is valued if it is watched.

Tips

- Allow plenty of time, it will take longer than you think.
- Sit the group down one end so that all observers are watching from the same place (unless the tasks has involved a topic that could be appreciated from 360 degrees).
- Choose appropriate music that matches the mood and flow of the movement that has been created. Hard techno might not do justice to a gentle piece about changing states of water.
- Encourage feedback from the rest of the group on both the movement and importantly the science being explored.
- Open questions encourage discussion, closed questions just encourage Yes or Nos.

activity 6 Reactions

Instructions

Key words and actions are set at the start of the task.

Example:

Key word	Movement
Sun	Arms form a circle in front of the body
Moon	Arms stretched above head and body curved
Star	Hands twinkle all around body
Earth	Jump to a heartbeat rhythm

The group walk around the room. Anyone can shout a word and the entire group must perform the movement, then anyone in the group can say Go. The group then walk around the room again until someone shouts another key word.

Science application

It is a great game for reflecting on key vocabulary used within the session. For example with planets you could use rotate, orbit, and spin.

activity 7 My Favourite Thing

Instructions

The participants stand in a circle. One at a time they say 'Today my favourite thing was…' and either say what it has been and / or show a movement to represent the favourite thing.

Additions and variations

1 The task can be changed into a guessing game where the movement is shown and the other participants must guest what the favourite thing was.

It can also be done in small groups where the group make a moving image or tableau of their favourite thing.

Science application

This task would work well at the end of a science lesson as a reviewer.

activity 8 Knew… and Now Know…

Instructions

The participants stand in a circle. One at a time they say 'One thing I knew before today was …and one thing I now know is…'. If they wish to the participants can also show a movement to represent the knew / now know thing.

Additions and variations

1 The task can be changed into a guessing game where the words are replaced with movement and the other participants must guest what the knew / now know could be.

2 It can also be done in small groups where the group make a moving image or tableau.

Science application

This task would work well at the end of a science lesson as a reviewer.

activity 9 1 to 10

Instructions

The participants stand in a space in the room. The leader gives the students a defined way of moving that can be abstract or narrative (for example, walking, growing like a flower, jumping, rotating like a planet). The leader gives statements about the session in terms of the participants enjoyment and how much they feel they have learnt.

The participants respond to each statement with movement that is determined by a scale of 1 to 10. If they strongly agree with the statement then they move as strongly as possible in the context of the defined way of moving (flower would become fully grown, walking would be running fast, rotating like a planet would be fast spinning!)

If the participants tend to disagree with the statement and mark it as a low score then the opposite happens (seed would sprout slightly but not move much, walking would be in slow motion or small steps, planet would hardly rotate at all!)

This task is fun and gives the teacher a visual record of the session.

Examples of statements might be:

- I have enjoyed the session today
- I have learnt a new thing today
- I am keen to learn more on this topic
- I thought today's session was too slow

The statements can also test knowledge:

- Mercury is the planet nearest the sun (10 = strongly agree, 1 = definitely not, 5 = not sure)
- H20 is also known as vinegar
- Electricity can be passed through wood

Additions and variations

1 The game can be played static (in a circle) or moving around the space

2 Other scales can be used – for example 0 – 100 degrees (100 boiling, 0 freezing)

Science application

A great game of reviewing / assessing/ evaluating the session.

activity 10 Sleeping Lions

Instructions

The participants all lie still in a space (they are the sleeping lions!). The leader goes round to see if anyone is moving. If somebody twitches then they are out of the game and sit at the side. The winner is the last still person left lying down.

To develop the game you can have 'Yawning'. The leader simply says 'Yawn' and the participants have five seconds to change to a new position and then must be still again. Anyone not still again within five seconds is out.

A participant is only out when they have been touched by the leader. The leader can call their name or talk to them to try to catch them out but lightly touching is the only official way of asking someone to leave the game.

Additions and variations

1 The game can be played standing, sitting, in all sorts of ways. The principle is that it is about stillness.

Science application

The shape of the still position can be determined by the science. For example, this game can be played in twos, and in pairs the leader gives different animals to make between them and hold them still. ' Yawning' can be an opportunity to introduce new animals.

You can also use numbers to change the shapes, for example, in your pairs the number of parts of the body that are allowed to touch the floor must be the same as the number of planets in the solar system. If they move they are out, if they have the wrong answers (i.e., not nine) they are out.

D – Sample Sessions

Sun, Moon & Earth

Session 1.1 Introduction to Solar System

Aims

To introduce the term solar system. To learn the names of the planets and the order starting with the nearest to the sun.

Focus

Keep the kettle boiling
Coffee, tea, chocolate
KEEP THE KETTLE BOILING

Solar System
Sun, moon, earth
SOLAR SYSTEM

Intro

Physical Brainstorm.
Name all the planets in order away from the sun.
Create movement to represent planet name/ characteristics.

Main

Sequencing.
Place the planets in order from the sun.
Choose a way to map the movements.
e.g. starting at the head work downwards finishing at the toe.

Closing

Share phrases.
Sticky Colours.

Session 1.2 Introduction to the Sun and its Effects on Planet Earth

Aims

To introduce key vocabulary, learn facts relating to the sun & earth. Introduce the term 'gravitational pull'.

Focus

Keep the Kettle Boiling
Solar System
Sun, moon, earth – SOLAR SYSTEM
Star
Light, Heat, Energy – STAR

Intro

Physical Brainstorm.
Characteristics of planet earth, and why it is so different to the other planets.
Introduce – spinning, sphere, water, air, light, warmth.

Main

Worksheet.
Using the words in the Introductory section.
Create a phrase.

Closing

Sticky Colours.
Introducing Gravitational Pull, when GP is said all are pulled towards the leader wherever they are standing.

Sun, Moon & Earth

Session 1.3 Introduction to the Moon and it's Relationship to Earth

Aims

To introduce key vocabulary and the principle of orbiting.

Focus

Commands.
Teach group actions to match key words.

CRESCENT, FULL, SPHERE, HALF

Walking around room give instructions group react by giving back the action.

Add in the command MOON – everyone must form a circle.
The person who gave the command must orbit around the circle of people.

Intro

Follow The Leader.
Using the key words in the focus activity the group in smaller teams can either reinforce the movements and words or create new movements to match the words.

Main

Journeys.
Show the pathway and changes of the moon around the earth. The movements created from the 'earth workshop' could be used as well as the moon movements.

Closing

Activity.
Sharing of Compositions.

Session 1.4 Earth, Moon & Sun

Aims

To understand the relationship and pathways of the earth, moon and sun.

Focus

When I go to the park…
When I fly to around the solar system I see…

Intro

Moving Image Depicting the movement of the SUN, MOON, & EARTH.

Main

Moving Images On.
Using all movements created for the earth, moon and sun show the pathways and characteristics of all three.

Closing

Sharing of compositions.
Space Finder.

Moving and Growing

Session 2.1 Introducing the Skeleton

Aims

To learn facts about our skeleton, to begin to recognise the range of movements and shape of the skeleton.

Focus

Do this, Do that.
What's inside – What's in, what's out.

DISCUSSION – Skeleton facts:
Is inside the body.
Gives us shape.

Intro

Sculpture.
Time to explore the range of movements/ shapes of the skeleton

Main

Worksheets.
Parts of the skeleton.

Closing

Share Compositions.

Session 2.2 More about the Skeleton

Aims

To investigate further the movement of the skeleton.
To isolate parts of the skeleton and look at their movement range.

Focus

When I go to the park
When I go the zoo I see…
When I go the zoo I like how the… moves.

Intro

Physical Brainstorm.
Teacher leads a range of movements isolating different body parts.

Main

Accumulation.
Looking and choosing movements for different parts of the body.

Closing

Share Composition.

Moving and Growing

Session 2.3 More about the Skeleton

Aims

To learn key vocabulary:
Hard, strong, smooth, brittle, protect.

Focus

True or false – general.
True or false – skeleton facts.

Intro

Physical Brainstorm.
Key words: hard, strong, smooth, brittle, protect.

Main

Worksheets.
Using the key words from the introductory activity.

Closing

Knew… and Know Now…

Session 2.4 Introduction to Muscles

Aims

To learn key vocabulary:
Active, passive, contract, relax.
To understand that bones work with muscles to move.

Focus

Commands.
Key words: active, passive, contract, relax.

Intro

Follow the leader.
Leader is the muscle and the follower is the bone.

Main

Accumulation / Consequence.

Closing

Reactions.

Forces

Session 3.1 Push Me, Pull You

Aims

To introduce key vocabulary push, pull.
To introduce extended vocabulary of push and pull.

Focus

8 / 4 / 2 / 1

Intro

Physical Brainstorm.
Push, Pull.
Roll, Lean, Fall, Topple, Swing, Rise.
Squash, Stretch, Bend, Twist, Crumple.

Main

Worksheets.
Using key vocabulary above.

Closing

Share compositions.

Session 3.2 Start / Stop / Change – Faster & Slower

Aims

To understand what can initiate a force and the resulting changes.

Focus

Commands.
Push / Pull / Force.

Intro

Sculpture.
Push – Pull.
Stop – Change.
Fast – Slow.

Main

Sequencing
Travelling duets – five PUSH Moves, five PULL Moves.
Children choose – two movements to change direction.
Children choose – which movements to do fast or slow.

Closing

Sharing.

Session 3.3 What a Throw

Aims

To introduce more related vocabulary and the opposition of movement.

Focus

Name and Action.
'I am a push and this is my pushing action.'

Intro

Physical Brainstorm.
Throw, Hit, Catch, Swing.
Look at opposition: high throw / low throw.

Main

Accumulation.
Duets opposition duets using key words.

Closing

Sharing of composition.

Session 3.4 Wheels – Turning / Travelling

Aims

To take on previously gained knowledge and to apply to context of rotation.

Focus

Shape the space.

Intro

Lucky Dip.
Circling body parts / turning / spinning / rolling.

Main

Sequencing.
Using movements from lucky dip link into a phrase of movement.

Closing

Sharing of composition.

Living Things and Habitats

Session 4.1 Exploring Vertebrate/ Invertebrate / Organisms

Aims

Defining the difference between Vertebrate and Invertebrate.

Focus

Yes / No (general).
Yes / No (vertebrate / invertebrate).
When I go to the Zoo.
When I go to the Zoo with focus on vertebrate/ invertebrate animals.

Intro

Physical Brainstorm.
What is a vertebrate / invertebrate.
How would a vertebrate move / invertebrate move?

Main

Worksheet.
Choose three from the vertebrates section and three from the invertebrates.
Link the six in any order.

Closing

Sharing of created phrases.
Sticky colours.

Session 4.2 Exploring what is an Organism

Aims

To enable the pupils to learn the five key worlds – Grow, feed, drink, reproduce, die.

Focus

Keep the kettle boiling.
Using words – grow, feed, drink, reproduce, die and ORGANISM.

Intro

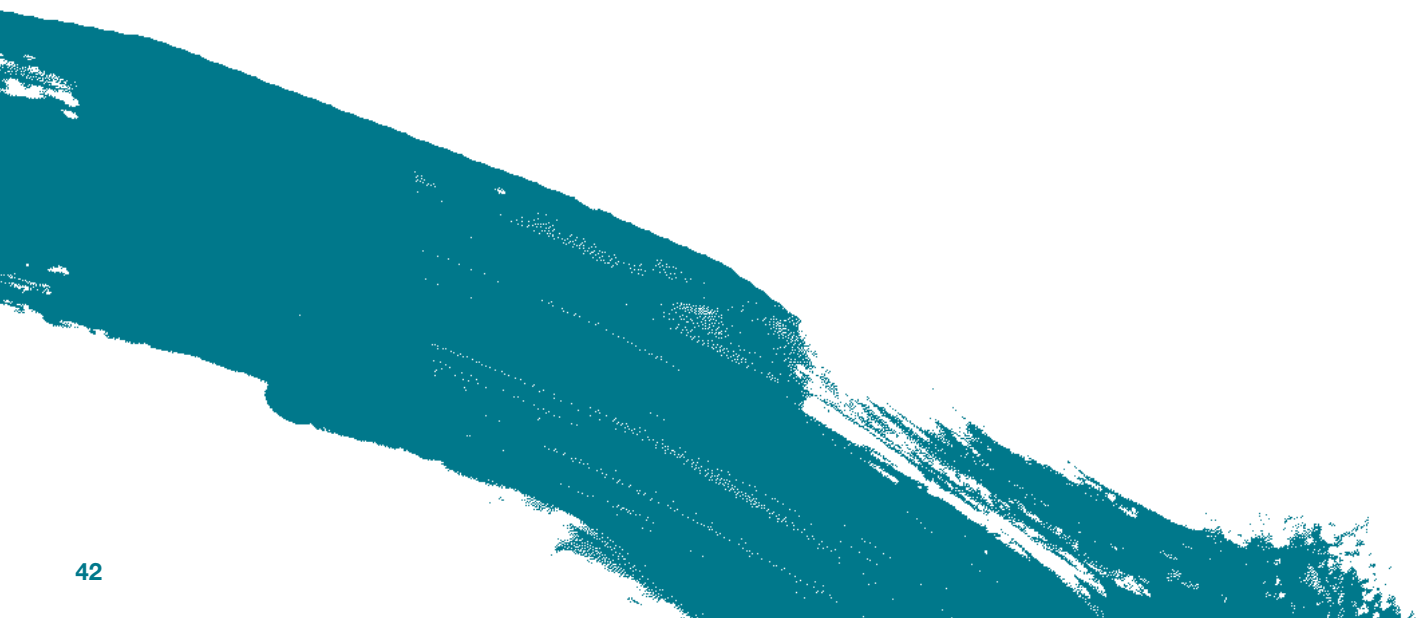
Key words.
Using words from above as a whole group create one phrase of movement to depict each word.

Main

Developmental.
Using one of the developmental tasks, the participants change the movement and add in new ones of their own to personalise the phrase of movement.

Closing

True or false using words from Organisms.



Living Things and Habitats

Session 4.3 Exploring the Contrasting Types of Habitats

Aims

To gain an understanding of how an animal's habitat is dependent upon size of the animal and other factors such as climate, temperature and possible predators.

Focus

Commands.
Give an organism and its habitat.

Intro

Physical Brainstorm.
Sizes of animals and their habitats.
Making the habitats in groups.

Main

Moving Images On.
Participants choose one habitat from each category and create the picture.
Show the organism inside the habitat.

Closing

Sharing of phrases.

Session 4.4 Introduction to Food Chains

Aims

To make clear the identity and role of Producer and Consumer in a food chain.

Focus

Commands.
Using Food / Chain / Energy.

Intro

Follow the leader.
As activity develops introduce idea that leader is PRODUCER and follower is CONSUMER.

Main

Consequence.
Illustrating the passing on of energy. In groups of four, the first person leads the group around the room. At an appropriate point, they turn around and make a big shape and shout SUN. The second person in the line shows a seed growing into a plant and the third and fourth people create new movements to show how they consume energy.

Closing

Sharing of phrases.

Appendix

Worksheets

1 Sample Session 1.2
2 Sample Session 2.1
3 Sample Session 2.3
4 Sample Session 3.1
5 Sample Session 4.1

Lucky Dip

1 Sample Session 3.4

SPINNING

SPHERE

WATER

AIR

LIGHT

WARMTH

SHAKE YOUR

Shoulders

Pelvis

CIRCLE YOUR

Skull

Spine

Ribs

STRETCH YOUR

Arms

Legs

HARD

STRONG

SMOOTH

BRITTLE

PROTECT

Worksheet 3.1

PUSH

PULL

ROLL

LEAN

FALL

TOPPLE

SWING

RISE

SQUASH

BEND

TWIST

CRUMPLE

Habitats

POND FIELD WOOD

Mini-habitats

HEDGE FLOWER BED

GRASSY PATCH

PLANT TROUGH TREE

Micro habitats

LEAF STONE

VERTEBRATES

Dog Cat Lion Horse

Shark Whale Robin

Eagle Pigeon Lizard

Snake Crocodile Frog

Toad Giraffe Monkey Bat

Squirrel Mouse Elephant

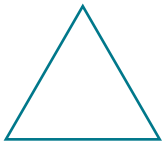
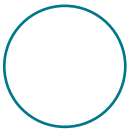
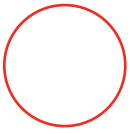
INVERTEBRATES

Ant Spider Jellyfish

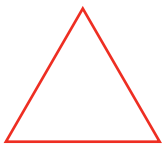
Octopus Earthworm

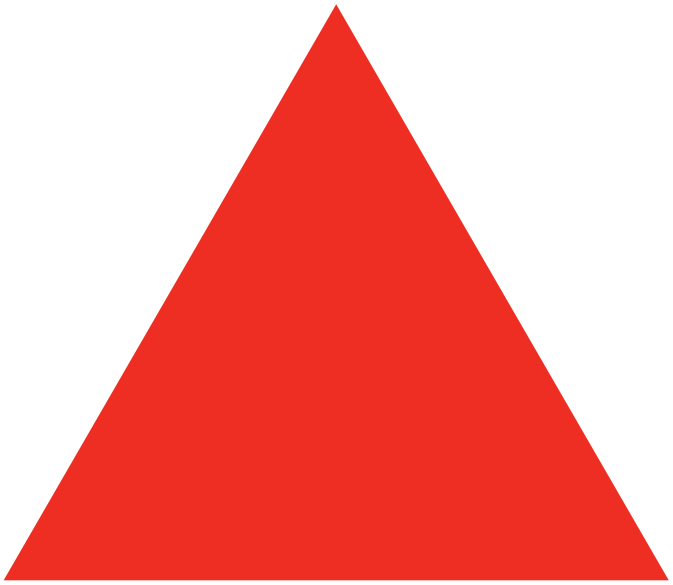
Starfish Snail Moth Squid

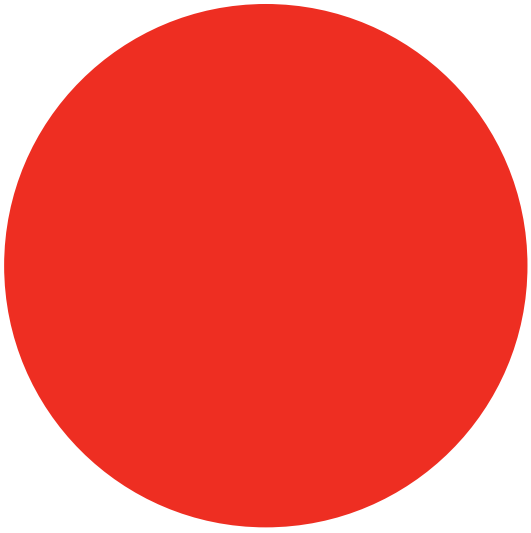
Worksheet 3.4

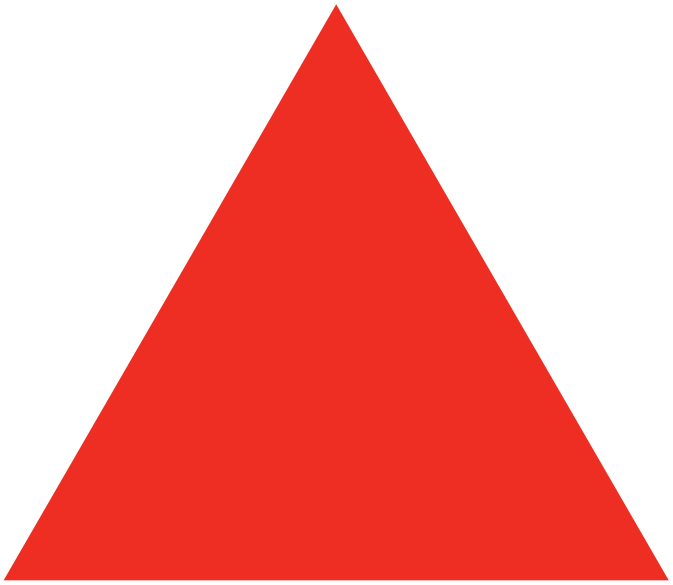
	Stretch your arm and rotate your wrist
	Lie on the floor and circle your knees
	Lie on your tummy, bend your knees and rotate your ankles
	Turn around twice
	Spin on your bottom
	Draw a circle above your head
	Make a circle with your fingers and place the circle on part of your body
	Make a circle with part of your body and thread another part of your body through
	Circle two parts of your body
	Draw three circles with the same part of your body making them increase in size with each rotation

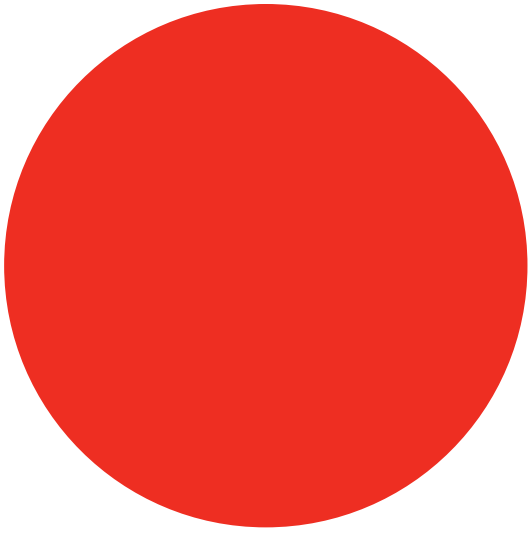
Worksheet 3.4

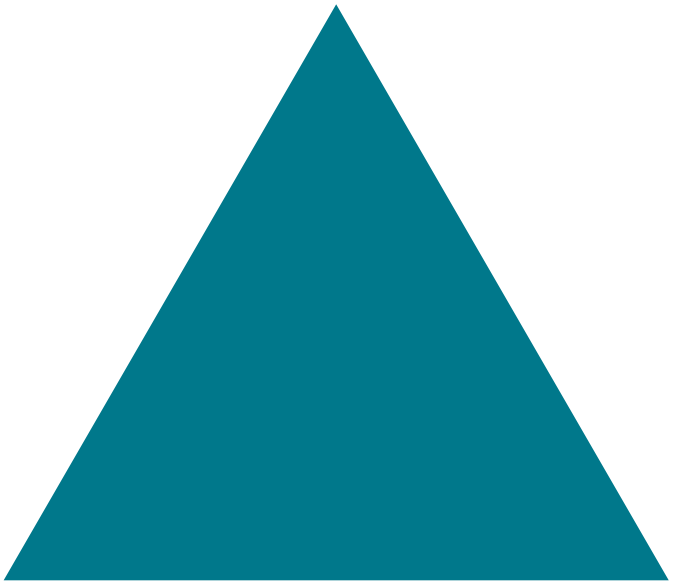
	Rotate your shoulders twice
	Draw a circle with your knee
	Circle your arms
	Turn around once
	Draw a circle with your elbow
	Move your head in a circle
	Roll on the floor once
	Jump in a circle
	Rotate your right arm forward
	Rotate your left leg at the hip

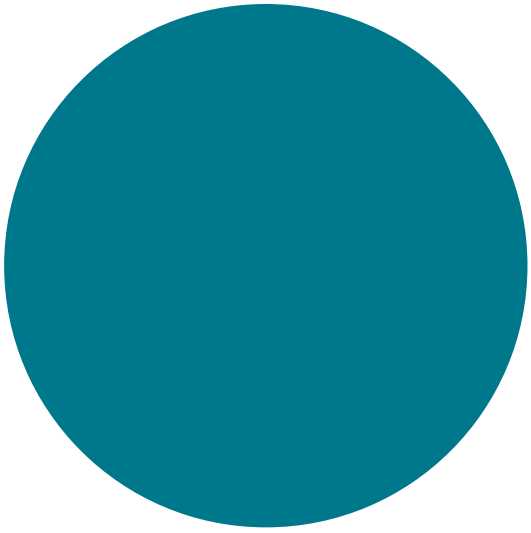


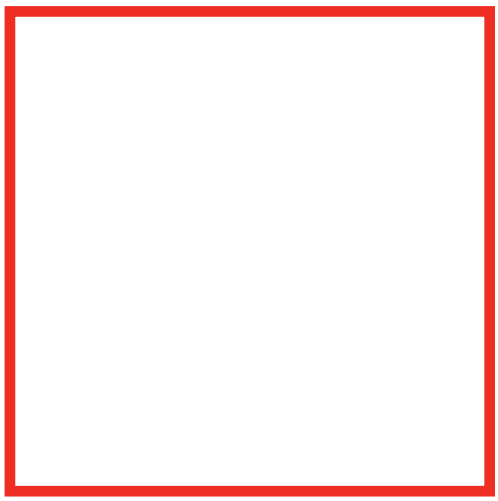


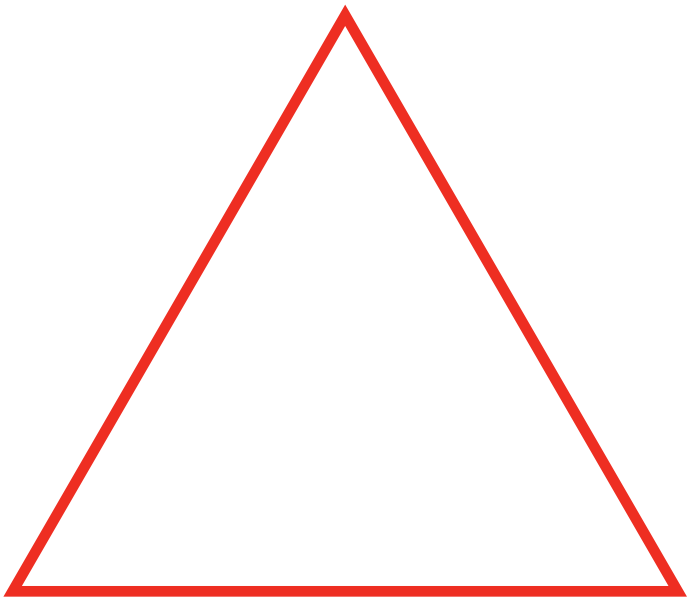


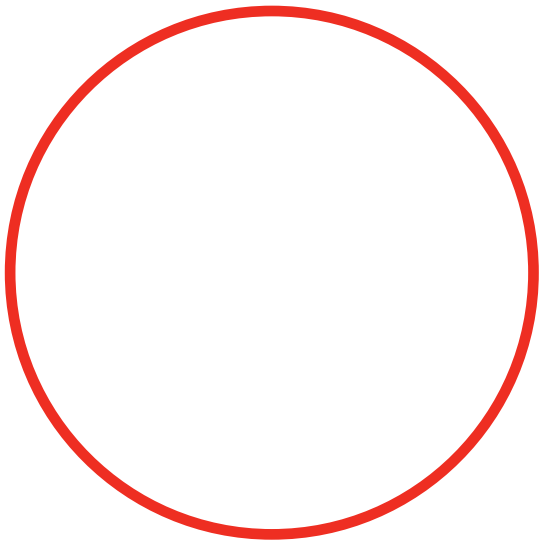


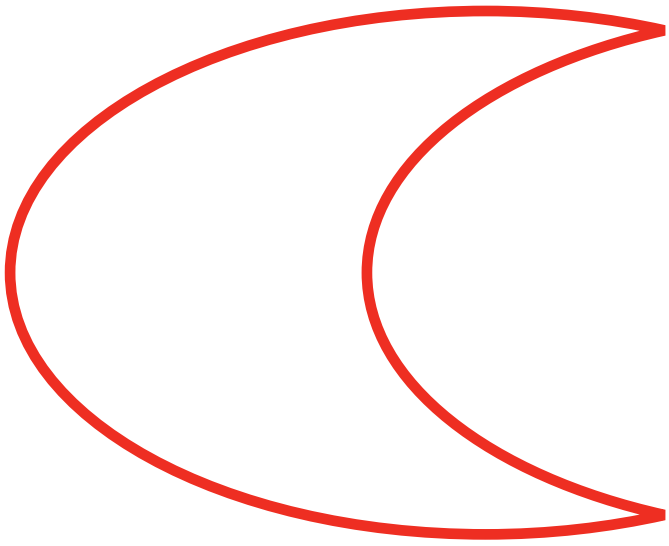


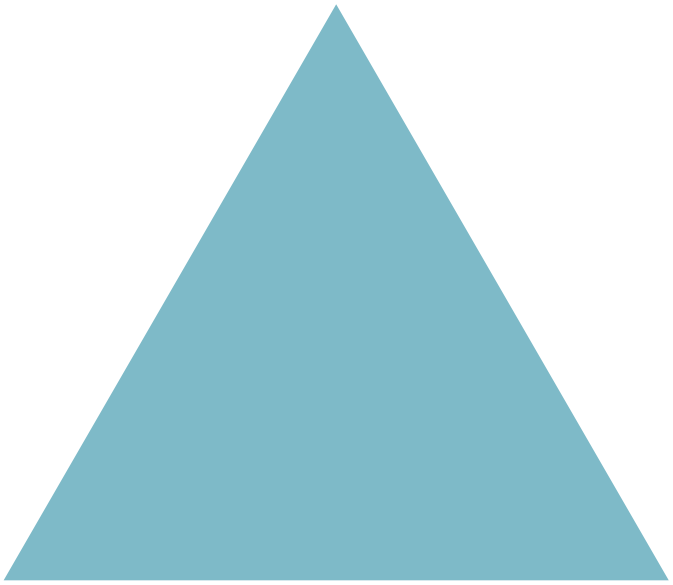


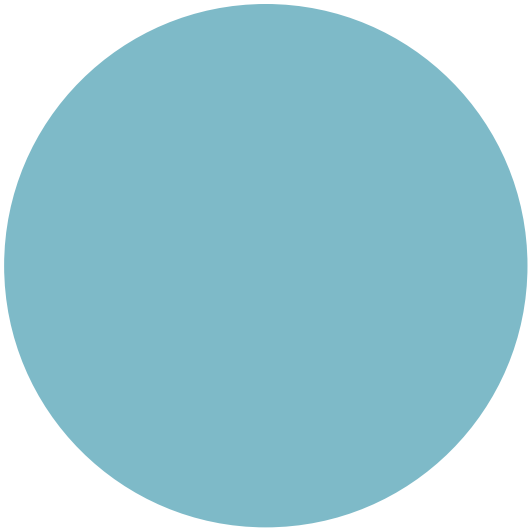


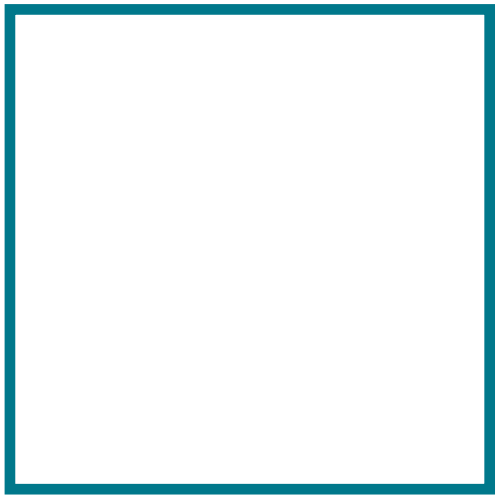


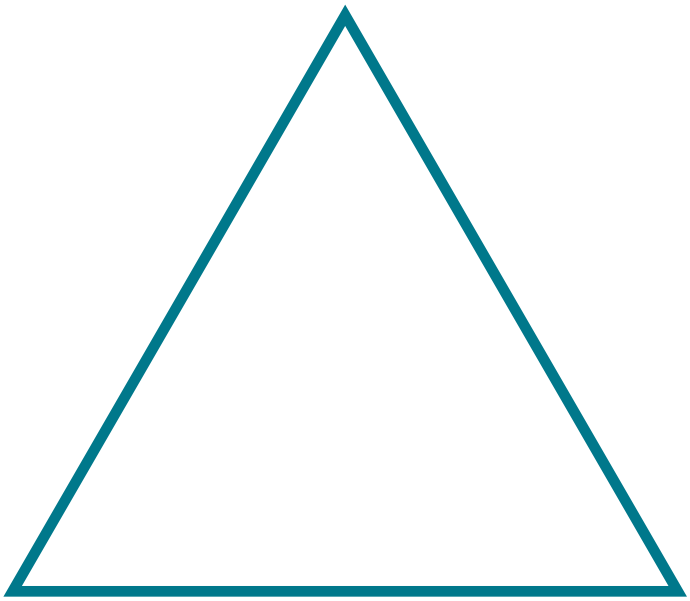


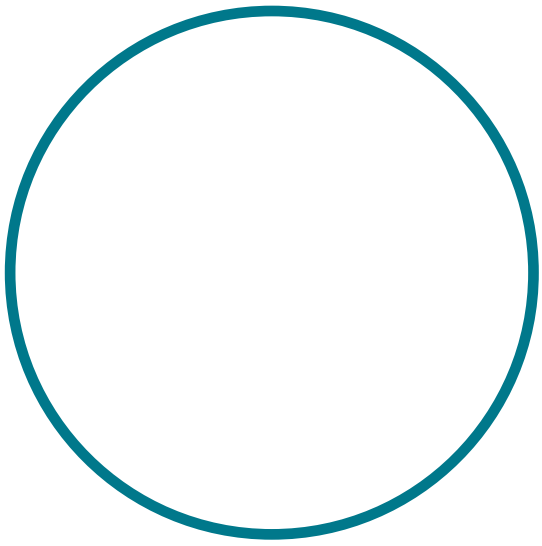


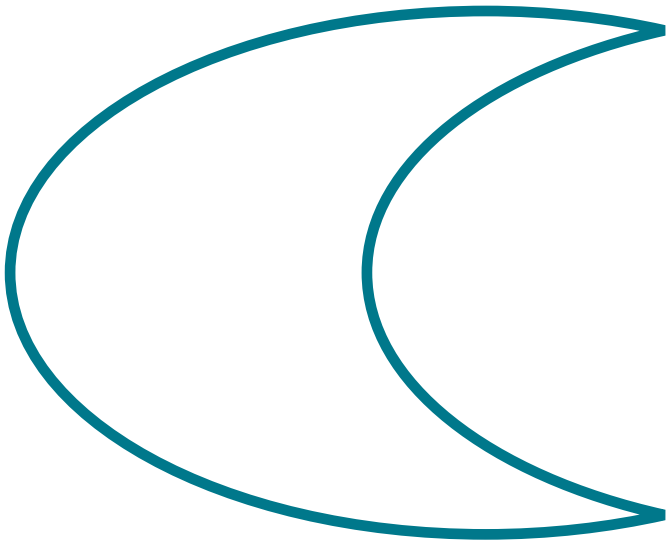












Index

“Intuition is the source of scientific knowledge”

Aristotle

Some pupils soak up science like sponges soak up water. Some don’t!

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Even the most able teachers can benefit from new ways of teaching.

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