

STEM resources

STEM – Science, Technology, Engineering and Maths – this subject matter form the basis of a wide array of knowledge that is inter-connected to work based careers. Many schools cover these areas through the school curriculum in an academic way but STEM based subjects don't have to be boring.

In Scouting we offer young people a unique learning space where everything can be explored. Learning by doing, working in teams, sharing ideas and being creative, solving problems – these are some of the ways that Scouting uses to gain and impart knowledge.

Throughout our programme we already introduce many STEM type activities to young people – of course we do not 'tag' them in this fashion and they are presented to young people as challenges, games and explorations in the fun learning spaces of our meetings and activities.

This collection of resources highlights the many activities and ideas that can be incorporated into our programmes, so that young people can see STEM as fun and awaken their interest in these subject areas.

In today's world, many employers seek a wide knowledge of the STEM related areas. With the increased focus on science, technology and information transfer and interaction those new to a work environment are expected to have a solid base of knowledge of these areas. Another requirement of the work place and an increasing request from employers are young people who have addition life skills. These skills include what are called 21st century skills – ability to work in teams, take leadership and responsibility, be creative and innovative, be able to solve problems all key skills provided by Scouting.

By combining STEM related areas with what we do best in Scouting – develop young people - we have a package of activities and ideas that can provide young people with a solid base from which to develop their life long career path.

This resource has been funded by the Science Foundation of Ireland because they recognise the value of the Scout programme and how it provides learning spaces for young people that are unique and based on play and fun. Science can be perceived as 'boring' by many young people but we



hope in this resource to provide a series of novel activities that will show science in a new fun way.

The resources have been created around a series of themes. By using themes it allows us to explore the wide area of STEM through many different scenarios. The resource only provides the ideas, it does not present a programme structure or how it might be developed as a programme cycle. This we will leave to the young people in your Section as they develop programme cycles and adventures in your programme. So, many possibilities are possible from simple insertions in meetings, to themed camps and activities, wide games or incident trails. The ideas presented are only a sample of the millions of possibilities that can be used. The internet is widely distributed with many ideas related to STEM. This resource presents and links to the best ones that can be undertaken by Scouts in all Sections.

Using the resource

The resource is driven by the poster (cover of this handbook) – a full size series of posters will be provided to each Group for display. On the poster is a series of QR codes that when scanned by a QR code app on a mobile phone that will bring the user to an online





interface. That interface will lead to this PDF resource, Video links, Pinterest pins and other websites. Each of the links is related to the theme that is been presented. There are a number of different resources and they can be found collectively via the resource area <u>www.scouting360.ie</u>

The mobile phone – in a young person's pocket- is a powerful interaction tool and computer and can quickly present the ideas to young people to explore. Ideas are presented in an easy to understand way and then it is time for some hands-on experience and learning by doing as each idea is tried out at meetings and activities.

It is suggested that Scouts (in all Sections) are exposed to the resources so that they can discover the ideas and then create programme cycles and adventures at which they can be included. The themes can be used as presented or mixed and matched to create new themes/adventures/trails etc.

Included in the resources is an innovation and creativity exercise. The idea of this exercise is to allow young people to create and invent. All inventions are created by a process of knowledge (science), inventing the new item or process (engineering), refining and developing (maths can be used) and finally producing a new invention (a tool – a piece of technology). The creation process is STEM applied and how it is done is in teams (small team system in sections), gathering knowledge, working creatively as a team, engineering their idea and solving problems and creating new solutions. We do this every time we challenge young people at meetings and on activities and incident trails. So again, Scouting is good at this.

It is therefore suggested that each programme cycle will include one 'invention' session where Scouts can take the knowledge they have explored in the themed meeting or programme cycle and use this knowledge to invent something new and exciting. Ideally this session would be undertaken in week three or four of a programme cycle when some knowledge has been gained in a themed area.

Plan, do, review, is of course a cornerstone of our programme method and the review process should include a reflection on what has been learned or changing attitudes to STEM type activities.

Storylining

As Baden Powell once said – 'Scouting is a game for young people and a job for adults' and within this context story- lining is extremely important in holding together the programmes and activities we run. A series of incidents can be held together with an inventive storyline, for example, related to escaping from a prison camp or tasks to be completed in a treasure hunt. Likewise at our meetings we will run games and challenges and these should also be story-lined (or within a symbolic framework – Lands of Adventure in the Cub Scout Section). By using story-lining and scenarios we allow young people to use their imagination and develop creative solutions to a challenge in context. Artificial time pressure is introduced – build this tower before the flood raises, or do this challenge before the door time lock engages. Time pressure enables leadership and organisation skills to be developed.

Real life scenarios such as accident setups are also useful for some situations and again relate to the subject matter under exploration.



In the context of the STEM resources they have been related to themes which in themselves suggest possible storylines and scenarios. Action hero's for example focuses on action hero films and situations, James Bond, Bourne, Indiana Jones, MacGyver and many such films and TV series provide the backdrop and the situations that an action hero must escape from, find clues, improvise or be inventive.

Therefore cracking a code or survival situations can be cloaked in mystery, suspense and excitement with the introduction of a creative storyline – 'defuse the bomb in 30 seconds or the world blows up' can make exciting the creation of an electrical circuit. Cracking a code is just a simple way of telling the team what is the next location they need to travel to. In some incidences a storyline can run over a whole weekend or period of time. This involves a bit more work in organising the elements of the programme but often it adds to and enhances the overall experience – a Viking theme, Space camp or Desert island survival.

Wide games are another feature of story-lining to be considered. In general terms they are quest driven scenarios – a mission must be completed. So in the context of a wide game Patrols (small team system) are each competing to reach an objective – a treasure hunt for example – and must complete various challenges and situations to progress towards their objective.



In all sections within a Group the programme is presented through a 'Programme Cycle'. This programme cycle can have any timeline but it contains three crucial features – Plan, Do, Review.

Each programme cycle is built around an adventure or series of adventures leading to a key highlight. Normally, a programme cycle will last around 4 weeks (but can be shorter or longer)

The 'adventure' is the main highlight of the Programme cycle – the weekend camp, for example, and the meetings or associated activities are the 'learning spaces' to enable the successful completion of the adventure. So, for example, the Scouts will need to be able to build an oven on the camp - so that they can bake a cake. The weekly meeting or a special day activity might be created for the Scouts to learn how to do this so it can be completed with success on the weekend camp. Within this process all of the Scouts will be involved in the creation of the adventure, the weekly meetings and activities. The team system will be used at all times and all the interactions associated with this process will be focused on the programme cycle and the planned adventure.

The Plan, Do, Review method is used....so the adventure is planned, it takes place and finally the programme cycle is reviewed and learning is determined.

The process

The first step in the creation of a Programme Cycle This is where the ideas for adventures are created and selected. This resource will highlight some ideas based around the theme but additional ideas can be added and created as young people wish in the programme creation stage.

Doing and discovering

This STEM based resource is designed to enable young people to discover science, technology, engineering and maths all around them and as part of their daily lives.

They are not subjects primarily associated with school, and that as Scouts we can have a lot of fun using, exploring and discovering knowledge based on fun, play and group interactions.

Each idea therefore has a 'science idea' that Scouts need to discover as they undertake each activity. In the review process it is hoped that Scouts express in their own way the things they have learned and the knowledge and new understandings they have gained.

Reviewing

The object of the review session is to understand what has happened, what we learned along the way and to 'mark up' and acknowledge how every Scout has progressed.

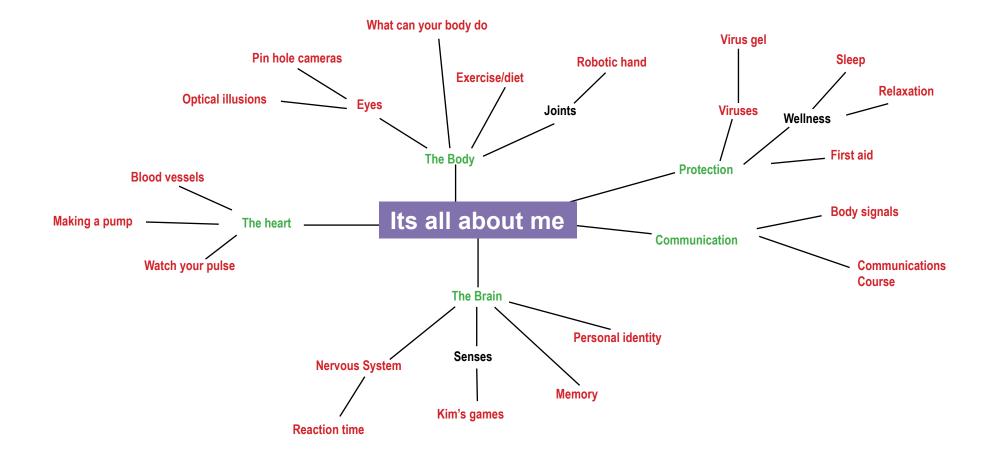
Reviewing is critical to the learning process. Until a Scout takes time to internalise and access what they have

learned through an experience it serves no real value - bar entertainment.

As Scouting is in the business of assisting young people in their development the review process is a vital component of the Scout programme. There are many ways of conducting the review – it can be done as the activity progresses or at the end of each day or in a sit down discussion at the end of the programme cycle.

BEGINS





It's all about me chart



The heart is one of the most important organs in the human body, continuously pumping blood around our body by pumping blood via a 97,000 km network of blood vessels. The organ works ceaselessly, beating 100,000 times a day in total clocking up three billion heartbeats over an average lifetime.

The heart is also central to life. The flow of blood both supplies oxygen from the lungs to the other organs and tissues.

Given the heart's many essential functions, we need to take care of it. Heart disease has risen steadily over the last century - 7.2 million people die from heart disease every year.





The vital machine

A cell is a stand alone living entity able to eat grow and reproduce. When all our cell are work well we feel well. Once a virus infects a cell it starts to replicate itself and effects other cells around it.

Our bodies have immune system which fight against these viral attacks - but it cannot fight against all viruses we come in contact with.

Examples of common human diseases caused by viruses include the common cold, the flu, chickenpox and cold sores. Serious diseases such as Ebola, AIDS, bird flu and SARS are all also caused by viruses.

Germs

Ĩ,

Indation JII



Our bodies need repair from time to time. First aid is a key skill that enables the quick repair of damage until expert help is available. Simple and immediate treatment keep us alive and prevent infection.

Our bodies are well organised machines and a misfunction, loss of blood, fall, or lack of the three essentials - air, breathing, circulation will immediately cause alarm and shock. Our bodies need urgent help to recover.







|--|--|





Helping other - first aid









The human body is the most fantastic machine in existence.

Your body machine is a complex organization of parts and systems that generally function cooperatively to keep you in proper working order.

Responsibilities of the Human Body:

- Your heart beats 103,689 times.
- Your blood travels 168,000,000 miles.
- You breathe 23,040 times.
- You inhale 12.5 cubic meters of air.
- You eat 1.5 kilos of food.
- You drink 2 liters of liquid
- You give off heat 29 degrees Celsius
- You speak about 48,000 words.
- You move 750 major muscles.
- And you exercise 7,000,000 brain cells with each thought.

When you consider your body doesn't come with spare parts, don't you think it makes good sense to do everything you can to keep your fabulous machine running in tiptop condition?



Body facts

Humans are social beings and need to communicate to survive in communities and with other people.

Through communication it is possible to exchange opinions, thoughts and meanings and develop the workings of th brain.

We communicate through are bodies - talking is only one aspect of the exchange. Each element providing inputs to the brain so that they can rationalise and develop thoughts and responses.



Communications

Science Stl Foundation Ireland For what's next

Science Sfi Foundation Ireland For what's next

Science Bit

The eyes are the windows to the world around us. They provide light signals to the brain. When light strikes either the rods or the cones of the retina, it's converted into an electric signal that is relayed to the brain via the optic nerve. The brain then translates the electrical signals into the images we see and experience.















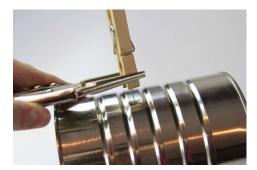


To make a photograph two sciences are applied physics and chemistry. A camera is a black box with a small hole in it. Light rays pass through the pinhole of the camera and an image appears on the back of the camera body.

The light rays hit a light sensitive film that will produce an image. In order to see the image the film is placed in chemicals that detect light sensitive silver halide crystals elements that exist on the film and the picture appears. Modern cameras use light sensors rather than film







The pinhole needs to be very small and you need to use a sewing needle to create the hole. First thing you need to do is file away a bit of the surface of the tin to make it thinner then punch the hole in the tin - otherwise it will be hard to do and will break your needle You will need to create a small shutter using black insulation tape. The will be in place before you take the picture then you lift it carefully for the exposure and then seal the hole again from the light.

A pinhole camera is simply a lightsealed black box with a pinhole to allow light to pass into the box and

land on photo sensitive paper or

film. Any sized box can be used -

a paint tin or can camera.

we demonstrate here how to make



Firstly you need a clean tin that has a lid -(paint tin). The inside of the tin and lid needs to be painted black - A tin of black spray paint is a simple way to do this.



Place a your camera on steady surface to prevent movement or blurry images. The exposure time can be a few seconds long.

Make a pin hole camera





Tray 3

Fixer



Tray 1 Developer

Place your B&W paper in the tray. Rock tray gently until the paper develops to the desired darkness. Lift paper with tongs, drip and place into Tray 2

Tray 2 Stop bath Rock try gently for about 10 seconds.

Rock tray gently for at least 2 minutes.

Lift paper, drip and Lift paper with tongs, place in Tray 3 drip and rinse paper with warm water for 4 minutes



To develop your picture you will need to set up a small darkroom. This can be a cupboard or small room under the stairs, a basement room perhaps.

If it has a window cover it with black plastic. It must be completely dark inside. You will be able to work safely when you have the red light bulb on.

You also need some equipment - 3 small development trays, some development chemicals, a tongs for lifting prints and a red safety bulb.

Mix up the developers as instructed on the pack. One chemical is the developer, the second the stop bath and the third the fixer.

The photo paper is first placed in the developer until the picture appears. This happens very quickly and if you leave the picture in the developer for too long it will go completely black. It is then placed in the stop bath to stop the developer from working. Lastly the paper is placed in the fixed to 'fix' the image. The paper is then washed in water to remove all chemicals and hung on a line to dry.

Pin hole camera are very basic so you will need to experiment to get it to work perfectly for you.

Pinhole "Selfie":



Developed Negative:



Inverted:



Developing your picture

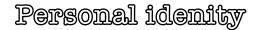


What makes us different to each other is our DNA.

DNA contains the information needed to build living things.

You inherited half of your DNA from your mother and half from your father. This is the reason people in families often look alike, but we are different from each other in many small ways. Your DNA will be 99.5% the same as everyone else on the planet. The DNA we share is what makes us human. The 0.5% of DNA that we don't share with everyone else is the bit that makes you unique.

This is the part of our DNA that decides whether we are a boy or a girl and whether we have blonde or brown hair, the color of your eyes, and how all your body parts are made and work together.



0,0



Our senses are constantly providing information to our brains when we are awake and humans and animals need time for sleep to absorb this information, do a bit of filing to aid memory and get rid of all the waste that cells produce every day. Without it we get cranky, a bit loopy and can even die.

When we sleep, our brain takes that time to clean out the build-up of brain junk we accumulate during our waking hours and the waste produced by every cell in our bodies.Sleeping is the time when our body's mental street-cleaners come out and do their work.

The brain's garbage men move twice as fast when you're sleeping, because your neurons shrink by half, making the cerebro-spinal fluid channels in our bodies wider.

Sleep restores our bodies and makes them ready to continue working and gather information and experiences.













Keeping well

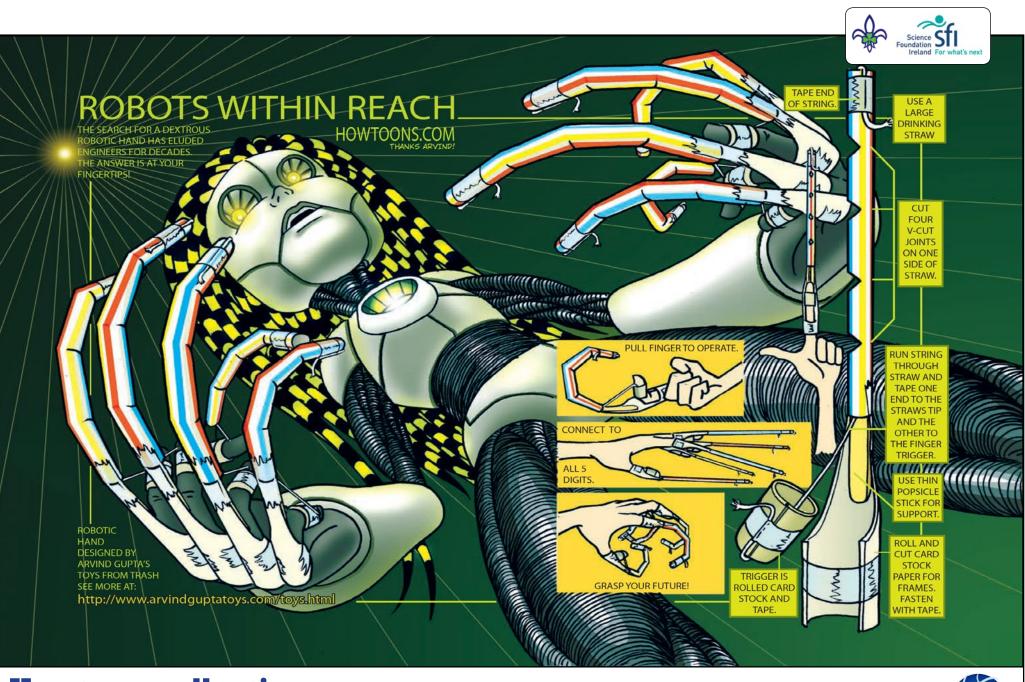


Food and water are necessary for human survival - they provide the fuel required to run the 'machine'. Proper diet and quality foods provide the macro - nutrients that maintain a healthy and working body

111



Fueling the body



Howtoon collection Visit howtoons.com for a full library of interesting activities you can try and explore.









Brain - memory

Science Bit

Your brain is the hub of your nervous system. It is made up of 100 billion nerve cells. Each cell is connected to around 10,000 others. So the total number of connections in your brain is about 1000 trillion.

The nervous system is a network of cells called neurons which transmit information in the form of electrical signals.

Your memory is your brain's filing system. It contains everything you have learnt. You can store an amazing amount of information it is limitless.





Kim's Games

Our brains receive information through our senses. Seeing and hearing senses dominate but all senses are relevant to providing the fullest experience to our brain so that they can react and gain knowledge. Kim's games are a series of sense games that will enable participants to refine and tune up their senses.

Like all games they are best done with others and are fun based. They require some setting up beforehand to achieve best results. The games are presented as bases. The ideal setup is to have a series of bases in a location and participants move clockwise around them. Allow a time limit for each activity and all groups move to a new activity at the same time rather than allow participants to wander at will.

A simple team point system will add to the game and encourage teamwork and cooperation.

Base Suggestions

Observation 1

Place 40 objects on the ground and cover the objects with a cloth. Each team are shown the cloth and the exercise is explained. The cloth is removed and the team are given 30 seconds to observe the objects. The objects are covered again and the team must list all of the objects they have seen.

Observation 2

Place a collection of different coloured stones on the ground. The stones are covered by a cloth. The task is explained to the team. They will have 20 seconds to observe the objects then they will be covered again. The team are then asked a series of questions about the stones - how many smooth stones, how many black stones etc.

Observation 3

The exercise is a spot the difference exercise. The team are shown a series of pictures and they must spot the differences between them.

Observation 4

This exercise relates to camouflage and stalking. A mixed area is required with some cover, long grass and open area. A target is created in the middle of the play area. This is manned by an observer. The object of the exercise is for the team to camouflage themselves with natural materials and starting from various positions creep up or get as near as they can to the observer position. The observer needs to move around to give the team some chance of sneaking up on the target. Every time a Scout is seen they should gain a 'negative point' the team try and get as low a point score as possible

Colour Palette

Each Scout is provided with a sticky label - name tag. The object of each team is to collect as many colours as they can from the surrounding area. Each Scout can only collect a small speck of the colour and stick it on their palette. A petal from a flower, a piece of grass etc. The object here is to collect colours and not pick every flower they can see.







Touch

A collection is made of about 20 objects. The objects need to be recognisable to touch - for example a pin or a piece of sandpaper. It can also include items such as a spoon or a matchstick. So, a wide selection of objects.

The team line up with their hands behind their backs - starting at one side the base leader passes the first object to the first Scout in the line and it is passed in turn to each member of the team. This is done in silence and while looking forward. When the object reaches the end of the line the base leader takes the object back.

The team must now list the objects they have felt passing through their hands. The team should also be asked to say what was the fifth item and perhaps the tenth item. This exercise is harder than you think so it might need two turns for the team.

Touch 2

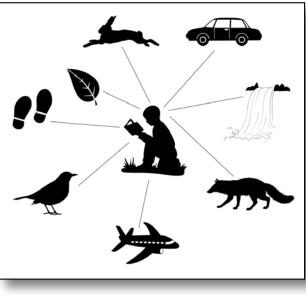
Place a number of objects in a cloth bag that is tied closed. The objects can be big and small. The bag is passed around each member of the team and they should try and identify each object they can feel.

Braille Dominoes

A selection of dominoes are arranged on a board/table in a grid fashion. Another board/table is available nearby. The Scouts are taken to the dominoes blindfolded and they must touch gentle - they cannot hold - like reading braille, the dominoes. They then must go to the other table/board and recreate the dominoes in the same configuration. Scouts can return to the arranged dominoes to confirm the arrangement - within the time allowed.

Sound Map

This exercise is best set up in a wide area with undergrowth. Each member of the team is provided with a pen and a postcard. In the middle they place an X. The Scouts are then brought in turn to a place in the play area where they must sit in silence for 5 minutes until they hear the whistle. During that time they must create a sound map by charting the position of each sound they hear. X is there position. So if they hear a bird whistle in the tree they should make a mark on the postcard relative to their position. So X is the center of a clock-face so to speak. By combining all of the postcards after the exercise it should be possible to show all the sounds in the play area.



Sounds

A series of sounds should be recorded on a mobile phone or recording device. approx. 20 sounds. The team must listen to the sound and state what they thing they are - include a lot of common sounds but add in a few that require some hard thinking. You should also include some nature sounds in the collection of sounds.

Time bomb

You will need an alarm clock for this exercise - an old one that has a high ticking sound and a good alarm. The alarm is hidden in the play space and the alarm is set to go off in approx.5 minutes. The team are blindfolded so that they can not discover the alarm by sight but must use their hearing to detect it. The team should be shown the play space - small open area with one of two obstacles before they are blindfolded, to give them an idea of the space. The clock is then set and the team are set free to find it before it goes off.

Smell box

A collection of small boxes of 'smelly things' is created. Approx. 12 smells - orange peel, spices, burnt item, old sock etc. The team are blindfolded and presented the smells that they must identify.

Smell trail

In this exercise the smelly objects are placed is a small plastic box and buried slightly in the ground so that the Scout has to smell it through a small hole drilled in the lid or by lifting the lid slightly. The Scouts are brought around the trail via a string trail. They must note the smells in turn and recall them/list them on completing the exercise.

Taste Box

This exercise is similar to the smell box above but related to taste. A collection of foods is created and the Scouts blindfolded must identify them.







On average, reaction time takes between 150 and 300 milliseconds.

When your eye sees a situation developing - an object dropping perhaps, information travels from sensory cells called neurons from the eye to the brain's visual cortex, an area devoted to understanding what you see. Next, the motor cortex—the part of the brain that directs movement—has to send signals along your spinal cord and to your arm, hand and finger muscles, telling them to respond in the proper sequence to catch the object—quickly!

That's a lot happening in less than half a second—and a pretty amazing feat!

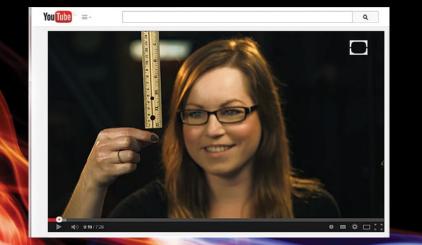
Reaction time

11 12

165

Ruler drop test





A simple exercise to test your reactions. You are tasked with catching a ruler as it drops between your fingers.

Participants will discover how quick they are by the distance the ruler passes between their fingers before it is caught. With practice they should try and improve their score.



Electric hands

The electric hand game is a pulse reaction game. Each team line up opposite each other and hold hands in a line.

At the end of the line there is a small ball/object that must be picked up. At the start of the line is the games master joining the two teams with his hands. The games master squeezes the hands of the lead member of each team and they have to pass the pulse along the team members by squeezing hands. When the last person gets the impulse they have topick up the object. it can also be played by passing an object along the line - hand to hand and placing it in a target area.

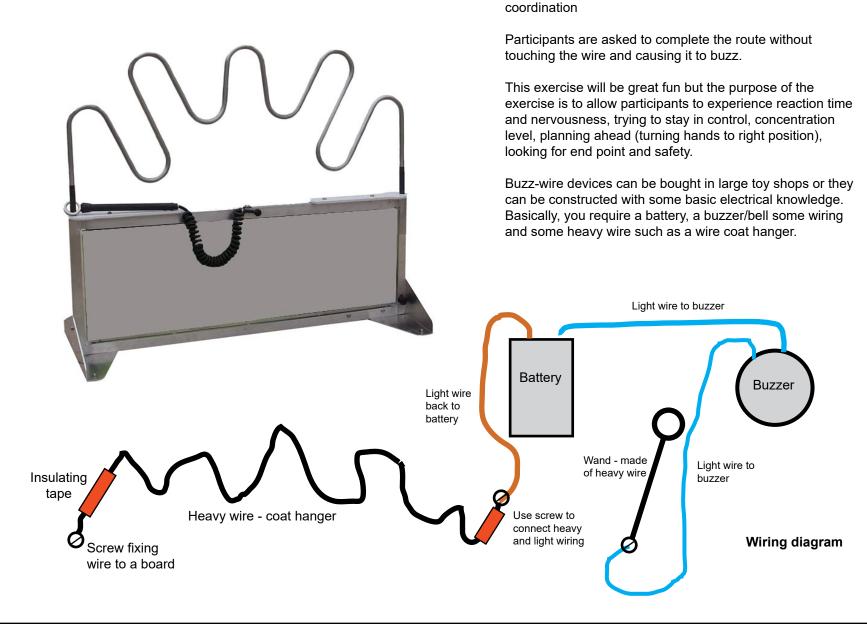


Quick Reaction



The buzz - wire exercise is related to eye and hand

Buzz - wire





Messengers of Peace



Dialogue and Communication Skills ...it's not all about talking

Communicating -- its not just about talking!

From the day that we are born we are seeking to communicate with others. Eye contact and body gestures are perhaps some of the first indicators of our efforts to communicate effectively.

Our first words, after a period of garbled sounds and nearly right sounding words is probably the word Ma Ma or Da Da.

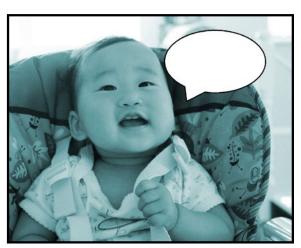
Soon afterwards we discover the 'yes' and 'no' words and perhaps a 'that' word accompanied by a hand pointing gesture.

Our emotional are displayed in a number of ways happy laughing and giggling and various types of crying...a whimper, a 'I am tired' cry and of course the 'I want my own way cry and maybe a tantrum.

And so begins our journey to becoming a walking, talking communicating human being.

This short course will bring you on a journey of discover of things you all ready know. That sounds strange because we will examine the many ways we communicate and try to provide you will key pointers to improve your communication skills and interactions with people.







Lets start with one word, the word 'hello' a greeting word and perhaps the first interaction word expressed when strangers and friends meet.



Listen to different people saying 'hello'... from the sound of the voice alone what do you think the person looks like and what is their attitude to you.

You will detect from the voices friendliness, coldness, welcoming, seriousness, superiority, etc.

Tone of voice is important in determining the attitude of the people we meet. Imagine what you sound like when you say 'hello' to people. How do you think you come across to the people you meet?

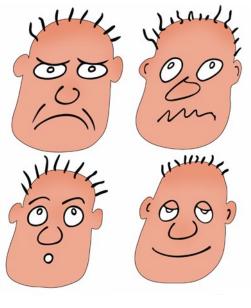




Some YouTube videos to explore

If you are viewing the online version of this document click on the QR icon. If you have a print version scan the QR code with your phone. This is a picture of a face our number one communication tool. We have two eyes, two ears, a mouth, nose, eyebrows and most of the muscles that exist in our bodies are contained within our facial muscles. Over 80 muscles in the face as most move without us being aware of it. Our ears provide the tool for receiving sound, our eyes are visual receivers, the nose to sense smell, our mouth for making sounds and tasting.

We also use our face to communicate – a smile in friendship, a frown, wide opened eyes in amazement, tears of sadness, or reddening of the cheeks in shyness. We can also include the movement of the head – nodding of the head in approval, or sideways backwards and forwards.





Back to our single word communication – 'hello' now as we look at a person saying the word again we can get a fuller impression of the meaning of that word with the additional information provided by facial expressions.

Have you changed you opinion of the people from the initial sound of the word 'hello'?

Our heads are attached to a body and this is also a communications tool. When we greet someone we do not stand still and let the head do the work we use our whole body. Many different cultures have ceremony attached to the basic 'hello' greeting, some shake hands, others embrace each other, some lightly kiss each other on the cheek.

How this act is carried out is another indicator that allows you to access the greeting and interaction with another human being.

This combination of signals of which only one is related to sound, determines how the interaction will proceed.





You did not expect that it was so complex mainly because it is something we do instinctively, it is embedded in our development at humans, it is so natural that we barely understand what our brain is doing to decode our interaction with other.

Now we will look at some of the frameworks that surround communicating with others. This process will examine the concept of dialogue, the interaction of people in conversation, exploring each others point of view, hearing stories and forming opinions, reaching conclusions and agreements.

Listening

A common expression and words of wisdom states :-

' We have two ears and one mouth and we should spend at least twice the amount of our time listening rather than talking'

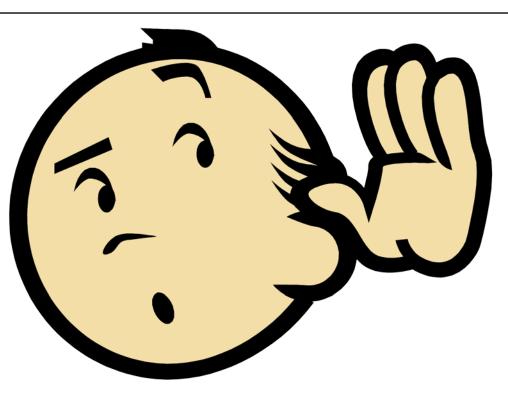
Communication time is spent: writing 9%, Reading 16%, Speaking 30%, Listening 45%. In other words, 75 % of our communication time is spent speaking and listening. It is estimated that our listening can be improved by 25%.

You would expect that we are very good at listening but in fact we are not as good as you may think.

Studies show that we remember between 25% - 50% of what we hear. That means we pay attention to less than half of the conversation.

We absorb information best by using multiple senses. Make your impressions visual, verbal and auditory.

Listening is a skill that we can all benefit from improving. By becoming a better listener, you will improve your interaction with other, as well as your ability to influence, persuade and negotiate. You will also avoid conflict and misunderstandings.



As we engage in conversation with others we want to get our point across, tell our story or experience. Often we will find ourselves thinking about the next thing we are going to say rather than listening to what is been said to us.

We are almost constantly in a talking listening situation how can we improve our listening skills?







Some YouTube videos and websites to explore

Practicing effective listening

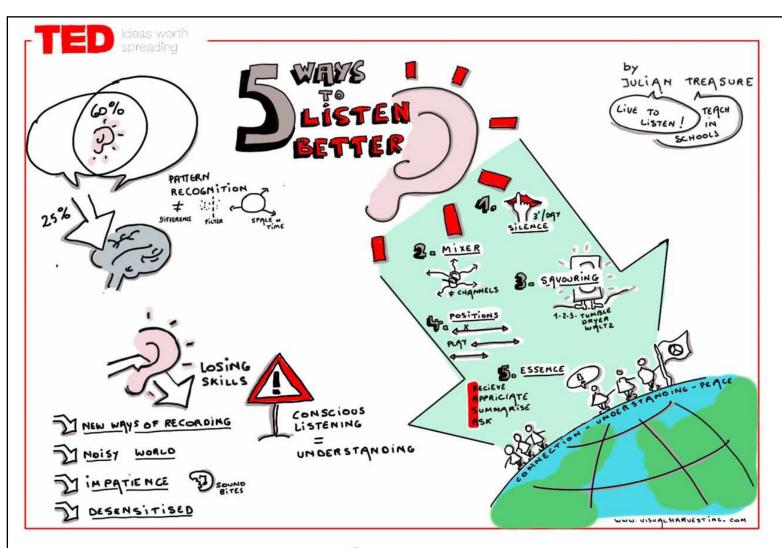
To be good at listening you need to practice and see the results. Listening is hard because in the flow of conversation and the dialogue process we are driven to dominate the conversation. We want to express our opinion and we want that opinion to be considered correct and gain approval of the person we are talking too. As a result we tend to cut short our listening time and spend the time thinking about how we are going to say our next thing. The result is often misunderstanding, potential disagreement or conclusion which are not correct.

In your conversations over the next period of time be conscious of how you listen during conversations – work at it.

Does it make a difference?

A study done at the University of Texas found that people remember (Metcalf 1997):

10 percent of what they read;
20 percent of what they hear;
30 percent of what they see;
50 percent of what they see and hear;
70 percent of what they say; and
90 percent of what they do and say



Thinking fast

Thoughts move about four times as fast as speech. With practice, while you are listening you will also be able to think about what you are hearing, really understand it, and give feedback to the speaker.



We listen when we participate, when we take part, when we are actively involved in the communication pattern. Only when thoughtful consideration has been given can we claim that we have actually listened. We can talk without thinking but to listen, careful and thoughtful consideration has to be given.

- Listen actively concentrate let the other person know you are listening
- Listen with your eyes as well as your ears
- Listen for what is said, what is not said, pauses, tone of voice, feelings.
- Wait before you interrupt. Avoid early disagreements.
- Silence is a vacuum. You don't always have to fill it with your voice. Often waiting for a second or two, allows the other person to add further information that will help you to make a relevant response.
- Reflection is another technique to get more information or clarify a point made. 'I'm not certain I understand', 'You seem to be saying...'
- Get more information by intelligent questioning
- Ask open questions to get other people to expand views and express his/her opinions and feelings.



How skilled are you at listening, are you an effective listener – try our quiz and see your results - click on QR code opposite.

It's your turn to talk – verbal skills

You will recall or initial exploration of saying the word 'hello' and how the sound or how the word is expressed can portray feeling and emotions. How we say certain words and how we express those words both verbally and expressively helps the listener to understand the context, emotion and importance of the words used in conversation.

Explore the following example and note how the emphasis on particular words can change the mean and context of the statement.

Adam broke the window in the bedroom yesterday.....

Try making a recording of your voice saying similar phases and emphasis different words. This is how you sound to a person who is listening to you.

Emotions, the use of emotion in speech is also important

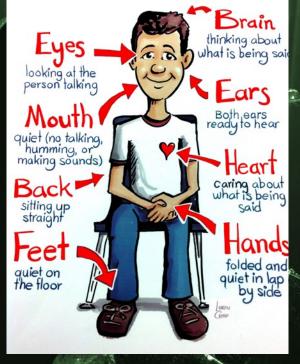
Imagine if you smile just before you make the statement 'Adam broke the window in the bedroom yesterday' you convey to the listener that perhaps the incident it trivial or potentially funny.

Imagine if you pause for a second then state the phrase in a serious manner – you convey that this statement is important.

So pace of delivery and speed of speech presents signal to the listener to listen in a particular way.

If you deliver a statement in a confident manner and with some authority you can be conceived to be an expert having particular knowledge about a subject. Adam broke the window in the bedroom yesterday !

Body Listening









Over doing it

All of the additional gestures, tones and expressions need to be natural and reflect your personality. Don't over do it otherwise it will feel unnatural and exaggerated and unbelievable.

Maintain control and be conscious of what you are saying, how you are saying it and the gestures and body language you are using to get your point across.



Engagement and focus on shared content oice Fa



Words someone is using

Conscious movement or gestures



The hands

The hands and arms have supporting roles to play in any conversation. In understanding how we use our hands we also need to be aware of cultural differences and behavior – some gesture might have different means in different places.

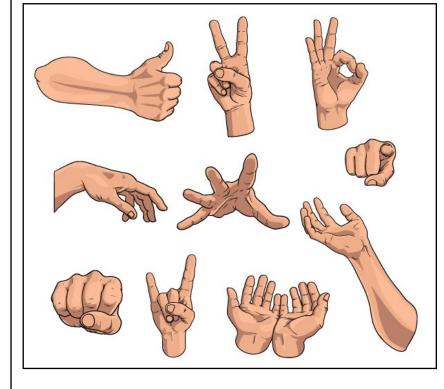
Pointing a finger Palms up and down Fists Thumbs up and down Intertwine of fingers Arms folded across the chest Arms open wide Hands on the face Holding your face/cheek Resting your face on a hand Scratching your head Every one of these gestures has a meaning and signal to the listener. Some of these gestures we may use or display sub-consciously and they can 'tell' the listeners may more things than you might want to say in your speech.

Subconscious

body language

For example you may stand before your listener with arms folded across your chest and state "yes, I like that idea and would like to explore it further' what message does the listener receive - 'I don't really like your idea' why because the physical gesture of folding your arms across your chest presents a protective or closed stance so the words and the gestures do not match.





Facial expressions

The building blocks of human relations

Speak to people - There is nothing as nice as a cheerful word of greeting

Smile at people - It takes 72 muscles to frown and only 14 to smile

Call people by name - The sweetest music to anyone's ears is the sound of their own name

Be friendly and helpful - If you would have friends, be friendly

Be cordial - Speak and act as if everything you do is a genuine pleasure

Be sincerely interested in people - You can like everyone if you try

Be generous with praise - and be cautious with criticism

Be considerate of the feelings of others - There are three sides to controversy - yours, the other fellows, and the right one.

Be alert and give service - What counts most in life is what we do for others.

Sounds simple – now lets look at the reasons why misunderstanding and perhaps conflict occurs







Some YouTube videos and quizzes to explore

If you are viewing the online version of this document click on the QR icon. If you have a print version scan the QR code with your phone.



Obstacles to communication





Some YouTube videos to explore

When we communicate, there is a sender and a receiver. Generally speaking, the sender wishes to transmit a message in order to achieve a result and to have a reaction from the other person. This message is conveyed through verbal or non - verbal channels. If the receiver cannot respond to your message either verbally or non - verbally, the communication is only one way - it is only information.

If it is possible for the receiver to give a verbal or non - verbal response to your message, communication is two - way. There is an exchange.

A response is a feedback; it is a return of the input. When feedback takes place, the receiver becomes the sender and the sender becomes the receiver.

Two - way communication makes a message more precise and understanding is achieved.

The reason why incomprehension can sometimes occurs is generally of an individual nature.

Certain difficulties which hinder effective dialogue stem from :

The way we express ourselves.

We sometimes use verbal or non - verbal elements that negatively affect the understanding of the message. It may be inappropriate vocabulary, a lack of clarity, a weak tone of voice, aggressive body gestures/movements.

It is therefore important for the sender to adapt the way he/she expresses him/herself to the receiver's capacity to understand.

The way we perceive things

We interpret and decipher messages through our reference system, which is composed of everything which makes us unique as individuals. Factors such as age, sex, job, experience, beliefs, values, education and attitudes act as filters through which all messages pass. Our reference system helps us to interpret information in a way which is understandable to us. It is therefore important for the sender of a message to understand the receiver's system of logic, by using, for example, active listening techniques.

The way we react, our attitudes

We tend to form certain opinions vis - á - vis other people, situations and things. These attitudes may be conscious or subconscious, collective or individual. On the whole, they stem from events of an emotional nature (fear, carelessness, mistrust, stress, hasty evaluation) and may block the communication process.

It is therefore important that the sender is attentive to his/her own attitudes, as well as those of the receiver, so as to avoid blocks in communication.

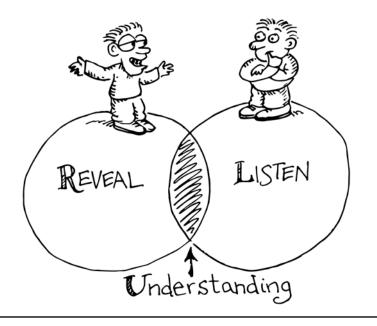








Some YouTube videos and quizzes to explore



The context of communication

It is important to examine the context in which communication takes place as this has a real impact on the outcome of any interaction. Some things to bear in mind are:

There are two parties to it

- Each person reacts to the environment in which the conversation takes place. Their own home, on the telephone, over a table, in a casual situation.
- At least one but more likely both people will have a whole lot of other issues, problems and things on their minds.
- It is unlikely that each person will have the same amount of time available for the communication process.
- Each person will have a different objective in mind for the outcome.
- Each of you will have your own understanding of and reactions to certain words, phrases and tones of voice.
- Each person may have already formed an opinion of the other which will influence their communication and their response to the other person.
- Each person comes to a situation with his or her own style of communication and with different levels of communication skill.
- Most people speak before they think. The content of their message is therefore unstructured and difficult to grasp.
- We have a lot on our minds that cannot readily be switched off
- We are anxious to refute the other's argument that we often interrupt before he has had the opportunity to make it.

- We stop listening to difficult material when we think it is too technical or too detailed.
- · We allow ourselves to be distracted by external things and lose concentration
- We sometimes introduce distractions ourselves. They can be more fun than the topic under discussion.
- We dismiss some information because it comes from people we consider unimportant.

Effective communication therefore requires

attention, awareness and work.



Dealing with conflict

Conflict is simply the expression of a difference of opinion, a difference of interest, or a contradiction of needs. Conflict can be handled or negotiated, as long as there is room for negotiation and the conflict is not artificially created for the sake of conflict. Unfortunately, it is often the case that conflicts are entirely created - often unconsciously - in order to confirm an idea, a prejudice or a point of view, or to reinforce a 'life position'.



Conflict need not be seen as a negative. Conflict can be positive, providing opportunities for growth rather than tension. It has meaning, prevents stagnation and is essential for creativity.

How conflict arises

Experience in groups shows us that individuals, because they have differing goals, needs, ways of looking at the world, etc. often find themselves in conflict or disagreement with others.

The factors which can be identified which lead to conflict are;

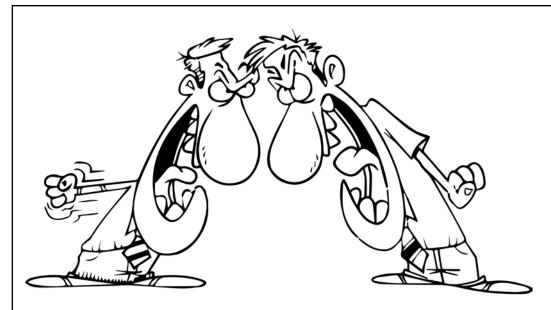
- looking after your own interests;
- lack of understanding of other persons point of view;
- a difference in values what is important to me and what is important to you;

the way I like to do things as opposed to the way you want to do things;

•

 and lastly the way I think about a particular situation and the way that you think about it.





Each of these factors tend to be combined with each other so leading to complex reasons as to why we are in disagreement. The more an individual defines the situation as one in which he/ she can only gain their goals at the expenses of others, the more conflict is likely. However, if the situation is one where everyone can reach their goals, the more co-operation is likely.

Conflict can be a positive interaction between individuals, only through expression of difference can good problem - solving take place.

For everyone to agree is as unrealistic as expecting that no agreement is possible. Conflict is a negative interaction when it is so severe as to disable the participants to the discussion and prevents the continuation of problem solving.

A conflict resolution device used by young school students



No loser

The principles of the 'no loser' method.

A statement of fact:

- My needs and yours are contradictory
- I respect your needs and
 I must respect mine
- I do not wish to impose my views but I cannot subject myself to yours
- We must therefore work together to seek a solution which is satisfactory to both of us

And thus there is 'no loser'

The six stages of the 'no loser' method are:

What is the problem? (Definition)

You and I propose alternative solutions (seeking of solutions)

What are the advantages and disadvantages of each proposed

solution?(analysis of the proposed solutions)

We choose one (decision)

We implement it (execution)

And together we evaluate the result (evaluation)

Seeking to avoid conflict at any cost leads, in the long term, to an accumulation of negative feelings, which, when boiling point is achieved, will result in an explosion and a real conflict. The reason for this conflict will no longer lie in the present situation and the difference of opinion in a given situation, but in the frustration of those involved, who will have held back a protest or reaction for too long.

Harmony

Harmony can be achieved by seeking a situation where both parties to the conflict can agree - a win / win situation rather than a lose/lose or a win/lose situation. Any conflict which is either win/lose or lose/lose result is an unhappy situation and future conflict is likely as one or other of the parties try to gain credibility before the discussion is concluded.

One of the biggest causes of conflict is lack of understanding of the others point of view, often stemming from poor listening skills. When conflict arises it is most important that listening is the first skill that should be employed to try and understand the other's position. It is important that each has a clear picture of the others point of view. Only when this is achieved can both parties discover similarities in their points of view and suggest different ways that their disagreement can be overcome. The solution may take each party along a different route and method of thinking however, in each case the objective of the discussion should not be lost and always stay central to the focus of both parties. If this interaction is successful then it is possible to move forward. If not then new suggestions and exploration should be considered. It is no good deciding on a solution that neither is happy with just because it ensures that nobody 'wins'. Aim for a solution that 'belongs' to both and with which both are happy.

If acting is a group situation, harmony can sometimes be harder to achieve as many other factors come into the melting pot. Agreement is now being sought among a number of individuals, each with different goals. The role of the chairperson therefore is to direct thinking and discussions seeking agreement at various stages of the meeting and reducing conflict and disagreement by focusing the group on the objective/task.





If a conflict is handled in this manner - without a spirit of conquest or domination - it will create an opportunity to clarify what each person, expects from the action undertaken and the means for reaching an agreement.

By establishing a method or an approach, which satisfies both parties, we create a situation of 'no loser'.

Group Dynamics

So far we have explored the idea of person to person communication (one to one interaction). In a group situation where a number of people are discussing or debating a subject other factors come into play.

Let's explore!!

In our exploration we will be examining the processes experienced while communicating within a formal group rather than an informal group of friends chatting, having fun. We will look at the process with regards to meetings or task driven challenges need to be discussed and agree an outcome or action.

As Scouts we will be familiar with these types of Patrol, troop and group discussions that are necessary in groupwork challenges within our programmes. Group discussion allows you to exchange information and ideas and gives you the experience of working in a team. As a leader of a team, discussions will enable you to draw on the ideas and expertise of team, and to acknowledge the individual as valued members of a team.

Structure

Normally, discussions of this type are constrained by time, the subject under discussion and the need for a positive outcome/action.

Some basic rules are required in order to have a positive outcome

All participants will treat each other with courtesy and respect.

All participants will be expected to contribute to the best of their ability.

Timelines need to be agreed – normally via a agenda or structure

Everyone is encouraged to express their own opinion and to seriously consider the opinions of others.



The advantages of group discussion are:

- The objective and outcome is shared
- Ideas can be generated and tested
- Working in groups is fun!
- The group/team is strengthen by its interaction together



Roles with a group discussion

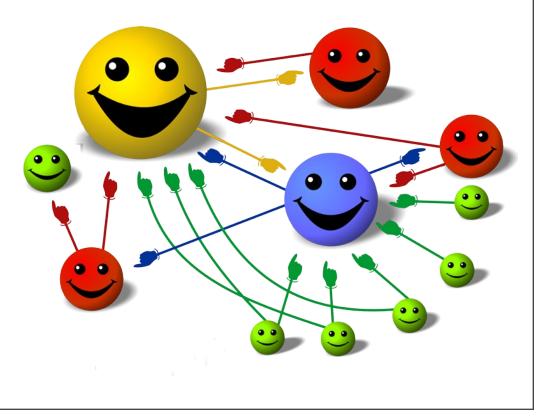
In the person to person model explored earlier it was you as an individual reacting to another, when we are placed in a group situation other behavior factors come into play. We cannot speak all of the time, there is a constantly changing dynamic as information is exchanged within the discussion.

Sub consciously we want to present our ideas and for those ideas to be accepted. This mission adds to our need for acceptance with the group and also to position ourselves within the hierarchy of the group. Nobody enters the discussion as a neutral, despite what we may think.

Throughout the discussion we will assume different roles. This roles will change constantly, we will have a personal style that will dominate but within the style we will adapt and change our perspective as the discussion develops.

Formal roles

- Initiator gets the discussion started
- Information seeker asks relevant questions about the discussion topic
- Information giver suggests possible answers, gives relevant information
- Procedure facilitator takes notes and keeps the discussion on-track
- Opinion seeker encourages group members to speak out
- Opinion giver shares thoughts, ideas, and opinions with the group
- Clarifier keeps track of the discussion and identifies what needs to be done next
- Summariser draws together the main points of the discussion



Developing and relationship roles

Development roles are behaviours we adapt and use to move the discussion and keep the team together. These are relationship roles the focus is on the relationship between group members.

Supporter: the person who supports an idea concept and build alliances with others

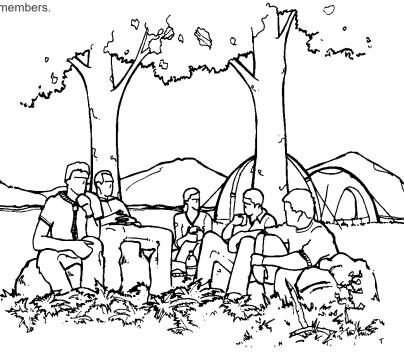
Harmoniser: likes to keep everything on an even keel and seeks harmony whenever a conflict might arise

Tension Reliever: like the harmonizer, this role is a conflict solving harmonizing role

Energiser: this role is one of energizing the discussion with ideas, possible solutions and lets do it attitude

Compromiser: this role seeks solution and agreement

Gatekeeper: likes to keep everyone focused to the task/discussion in hand and ensure everyone is involved.





Negative roles

We also have the potential to adapt negative roles, these normally come to the fore when we are under pressure or are loosing in our quest. Once you adapt such roles you immediately are on a path of personal destruction. Your effectiveness within the team is lost and friendships can be

strained.

Non participation or an unwillingness to engage: by adapting this role a person does not contribute and/ or inhibits or disrupts the participation of other group members.

Attacker: this role acts aggressively by expressing disapproval of contributions to the discussion.

Dominator: by adapting this role you seek to dominate and talk too much and exclude or diminish the inputs of other members of the group

Clown: this role is taken by a person who wants to show off, take the discussion seriously or presents inappropriate suggestions and humour.

Cruiser: this is a role adapted because you are too lazy to involve yourself and give 100% working on the principle that whatever the group decide will be okay with them.

So, again we can see that to be an effective communicator you require attention, awareness and work to ensure of successful outcomes.

We need to work on it all of the time...practice makes perfect and learning by doing is one of the best way to improve and perfect this skill.

Dialogue and communications skills certification quiz

This quiz will bring you back over the course content – the course elements and addition documents and videos.

If you complete the quiz successfully you will be able to show your achievement and the new knowledge and understandings you now have.

Questions

Talking to others

What statement below is correct - True or false

- I greet people in a friendly way with a firm greeting, maintaining eye contact; smiling and making people feel welcome.
- I greet people in a friendly way, smile and then step back and wait for them to respond I greet people with a nod of my head and wait and see if they want to talk to me
- I wait for people to greet me first before I respond. Once they greet me in a friendly way I respond.

To be a good communicator it is best to be

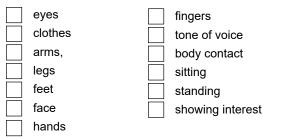
Good at talking

Speak many languages Be an effective listener Be good at presentations

- Be friendly to others
- Be good at asking questions

Be aware of all the signals and gestures you are making

Select key indicators from the list



When asking Open ended question select the key words to consider

what	when	why	how	where	tell me

What have you learnt about storytelling

- It provides interesting conversation,
- It can place complex subjects in context,
- It is a good tool for introducing humour into a conversation.
- It can make conversations long winded.
- Stories usually don't get to the point quickly enough.
- They are a waste of time, just say what you want say directly.

What have you learnt about tone of voice

it presents a friendly atmosphere
it allows me to control the conversation
it allows me to be care of what I mean
it is hard to control when you are a bit annoyed
it can create fear and annoyance in the listener

Communication - what are the percentages of time sent communicating (2) Don't jump to conclusions – use the method of				
Listening 45% 35% 55% 25% 75% Speaking 25% 30% 35% 45% 60% Reading 10% 12% 16% 22% 32% Writing 2% 9% 15% 21% 23% Listening kills in the correct order A,B C D Summarize Ask Receive Appreciate	 listening, understanding body language, verifying, checking, being aware of, paying attention, summarise, thinking about your next statement. Empathy - what statement best states what empathy means			
 Eye contact - what statement is correct I indicate to others that I am paying attention by maintaining eye contact I look up now and then to show a person I am interested. I like to look around and feel the whole space we are sitting together in. 	 Empathy is when you recognize other people's feelings and value their point of view Empathy is 'I know what you want and I am going to tell you how to do it' Empathy is smiling at someone and giving them a hug Empathy is telling some you feel the same as them about and issue 			
Engage with the other person - what are the key indicators to the receiver	What phrases are good for summarizing			
 Body language, Talking directly to them, Keeping an eye on what is going on around us Preventing other people from overhearing our conversation. Giving people time and attention. Trying to be funny and make the conversation less serious, Avoid distractions and keep the receiver in focus. 	 So, what I hear you saying is If I hear you correctly You are telling me that Yes, that fine but I don't believe you No way!!! Let me tell you what I would do 			
What is the correct word to complete these statements				
(1) Conscious listening creates				
Boredom Understanding Knowledge	continued on next page			
Good hearing Attention Tolerance				

Dealing with conflict

Place the following points in the correct order

The six stages of the 'no loser' method are:

 And together we evaluate the result (evaluation) What is the problem? (Definition) We implement it (execution) You and I propose alternative solutions (seeking of solutions) We choose one (decision) What are the advantages and disadvantages of each proposed solution?(analysis of the proposed solutions) 	 Listening Ordering people around Expressing his/her opinion Seeks consensus Trying to explain the task Summarises the discussions Clarifies points Gets everyone to agree a single action Delegates work to all the team
Which of these statements are trueall of them, 2 of them, 3	Lets everyone express their opinion
of them one of them, none of them.	What are the things likely to cause conflict in a team
 The factors which can be identified which lead to conflict are; looking after your own interests; lack of understanding of other persons point of view; a difference in values - what is important to me and what is important to you; the way I like to do things as opposed to the way you want to do things; 	 Lack of understanding Bullying and forcing an opinion or action lack of inclusion Not listening Not doing what you are ordered to do doing something you don't want to do Not agreeing an action Disorder Following the leader A collection of people rather than a team of people
	An effective team needs to consider
• the way I think about a particular situation and the way that you think about it.	 The task, The agreed action, The individual members of the team, How the team works together, Winning at all costs Following the leaders ideas

Working with groups

In working with a Patrol or Team what are the key communication skills does a leader uses

Answers to Quiz Questions

Talking to others

What statement below is correct Greetings

welcome. maintaining eye contact; smiling and making people feel I greet people in a friendly way with a firm greeting,

To be a good communicator it is best to be

Be aware of all the signals and gestures you are making Be an effective listener

Select key indicators from the list

showing interest) eyes, arms, legs, face, hands, fingers, tone of voice,

to consider When asking Open ended question select the key words

what , when, why, how, tell me,

What have you learnt about storytelling

,txetnos ni stoeldus it provides interesting conversation, it can place complex

What have you learnt about tone of voice

it is hard to control when you are a bit annoyed it presents a friendly atmosphere

communicating Communication - what are the percentages of time sent

%6	Quiting
%9L	Reading
30%	Speaking
%9t	Listening

You are telling me that.... If I hear you correctly.... So, what I hear you saying is

What phrases are good for summarizing

value their point of view Empathy is when you recognize other people's feelings and

disorder

poinetening

Clarifies points

Seeks consensus

Working with groups

Dealing with conflict

We implement it (execution)

We choose one (decision)

What is the problem? (Definition)

Cistening

(suoijinjos

not agreeing an action

lack of understanding

Lets everyone express their opinion

communication skills a leader uses

In working with a patrol or team what are the key.

Which of these statements are trueall of them,

(noiteuleve) tlueer et the result (evaluation)

proposed solution?(analysis of the proposed solutions)

What are the advantages and disadvantages of each

You and I propose alternative solutions (seeking of

The six stages of the 'no loser' method are:

Place the following points in the correct order

Delegates work to all the team Gets everyone to agree a single action

Summarises the discussions

Trying to explain the task

bullying and forcing an opinion or action lack of inclusion

What are the things likely to cause conflict in a team

Empathy - what statement best states what empathy means

, seinemmu2 Being aware of, Checking, ,9nifying, '6uinsteid

Give people time and attention. ,ment of the them, to them,

Eye contact - what statement is correct

receive, appreciate, summarise, ask

correct order A, B C D

fody language,

to the receiver

eye contact

Cistening

What is the correct word to complete this statement

Avoid distractions and keep the receiver in focus.

Don't jump to conclusions – use the method of ...

Engage with the other person - what are the key indicators

I indicate to others that I am paying attention by maintaining

summarize, ask, receive, appreciate, - rearrange in the

Conscious listening creates...understanding,