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Problem Solving and Team Building

Top tips for successful sessions

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Maximising Learning works with teachers, both internationally and in the United Kingdom, to create socially competent, emotionally intelligent, entrepreneurial young people. We aim to enable and empower teachers to utilise the most appropriate learning environments, wherever they may be.

Maximising Learning deliver the ITC First Level 3 Award in Learning Beyond the Classroom

1. Problem solving and team building

Problem solving and *teambuilding* are two terms that are often interchanged. The key skill of *problem-solving* involves children in developing the skills and strategies that will help them to solve problems they face in learning and in life. Problem-solving includes the skills of identifying and understanding the problem, planning the ways to solve a problem, monitoring progress in tackling a problem and reviewing a solution to a problem (National Curriculum, 2000). *Team building*, on the other hand, is more concerned with the self-awareness and social interactions that enable children to work more effectively with others to achieve common outcomes.

Some indicators of problem-solving skills

Children and young people may demonstrate that they can:

- understand the concept of cause and effect;
- apply prior learning to a problem;
- recognise and can talk (or otherwise communicate) about a problem;
- consider a range of possible solutions;
- ask questions and select and record information relevant to the problem;
- plan the steps and strategies they will use;
- predict possible effects of different solutions or modifications;
- respond to a problem or task using trial and error;
- use a cycle of trial, error and improvement;
- review what has been done and recognise the outcome (i.e. that the problem has been solved or a different course of action is needed).

Adapted from http://oer.educ.cam.ac.uk/wiki/Problem_Solving_in_Primary_Education/Document

Some indicators of teamwork skills

Children and young people may demonstrate that they:

- Understand the effect their behaviour has on others;
- Recognise and modify any aspects of their behaviour that adversely affect their group;
- Recognise their own strengths and current limitations;
- Understand and accept their role in a particular task;
- Share ideas and value others' contributions;
- Listen to others actively and respectfully;
- Take on roles of responsibility and planning;
- Listen to instructions and respond accordingly;
- Come up with ideas and are able to express them;
- Are able to step back and allow others to take a leadership role;
- Are able to take on a leadership role where appropriate;
- Are willing to try out a variety of ideas in order to find out what will work.

High Quality Outdoor Learning, *English Outdoor Council*, 2016

2. Planning

What do you want to achieve? Some examples:

- **Teamwork:** working well in groups and teams
- **Creativity:** thinking of, sharing and playing with new or unusual ideas
- **Communication:** communicating opinions and feelings appropriately
- **Tenacity:** sticking at a task in order to meet deadlines
- **Self-management:** taking charge of one's learning
- **Positive Self Image:** valuing oneself and one's achievements
- **Self-motivation:** being motivated to do what needs to be done
- **Critical Thinking:** critically reviewing and evaluating what you do and how you do it
- **Problem Solving:** working towards a solution by analysing a problem and forming strategies
- **Social Intelligence:** responding appropriately to different people and situations

Having a clear idea of what the intended outcomes are helps to steer towards what activities are going to be used and how. Some activities might be better for group work, some to encourage listening etc. However, with a few changes many activities can be used in different ways to look at particular outcomes or process.

3. Progression

In much the same way as activities are sequenced in the classroom, progression through problem solving challenges should be a goal for the teacher. Many tasks can be adapted to meet specific goals (as described above), and can be differentiated by strategies such as rule setting, competition and 'selective constraints'. This last strategy allows one person to be blindfold, one to not be speaking, etc. and can be a productive way of enabling quieter group members to have a voice.

4. Adapting the activity

Many team building/problem solving activities have a focus as described above. However, once the issues around working together and self-awareness have been addressed, it is possible to use the activities for more curricular-led outcomes. 'Keypad', for example (a circle of rope with 30 numbered discs in it), can be modified to be used for maths and literacy (by changing the numbers to letters or phonics).

5. Group involvement / group size

Some tasks are better suited to small groups and others large ones. The key is to ensure that all students have the opportunity to be involved. Cooperative learning strategies such as allocating roles (eg time keeper, rule checker, questioner, resource manager etc) can be useful. Writing the brief to include constraints such as everyone must do a certain thing is another strategy.
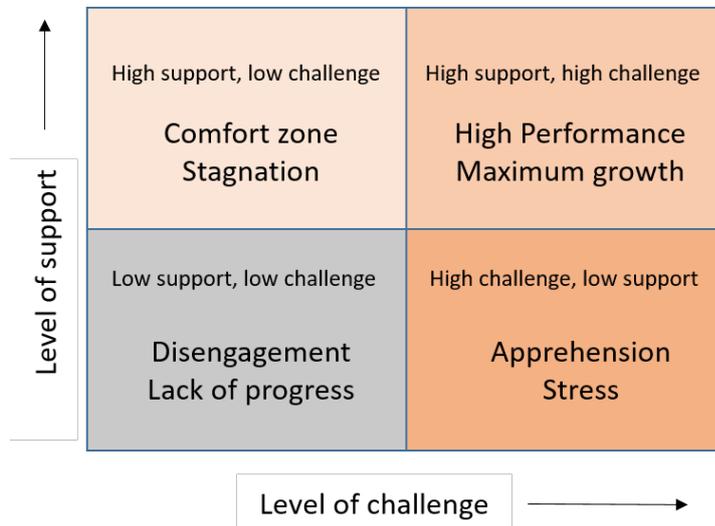
6. Changing the focus: briefing

The easiest way to alter an activity is by changing the brief. There are several ways to initiate a challenge. Key methods (or adaptions thereof) include:

- Verbal brief by the teacher to the whole group
- Verbal brief by the teacher to one group member who then briefs the rest
- Written brief read by the group

The brief is important. As well as providing the structure to the session, it also steers the group towards the intended outcomes. Listening and finding solutions that match given constraints are all feasible outcomes. It is also an opportunity for students to explore loopholes – and an opportunity for the brief-writer to remove them for next time!

7. Challenge vs support

	High support, low challenge **Comfort zone** **Stagnation**	High support, high challenge **High Performance** **Maximum growth**
Level of support ↑	Low support, low challenge **Disengagement** **Lack of progress**	High challenge, low support **Apprehension** **Stress**

Level of challenge →

The above diagram illustrates the balance between challenge and support. The ideal situation is the upper right box – high performance – but it is also worth noting that an apparently easy challenge can be very challenging for a group without the necessary skills to deal with it. High challenge doesn't necessarily mean objectively difficult.

8. Intervention

When to intervene? As teachers, we are often guilty of stepping in to help before we actually need to. Being able to recognise when students have reached an impasse is a key skill and is no different to being in a classroom. Behaviour is often the key clue to an impending blockage, as frustration with inter group communication appears, but there could also be a simple lack of understanding of what to do next. Intervention should not involve telling the group what to do; the nature of an intervention will depend on what you want to achieve, and it is important to remember that a key question or clue could be all that is needed to unlock the process. If the actual interpersonal

relationships are not working, it may be necessary to cease the activity (temporarily) and make sure that the group understand how to engage with each other, and sometimes this is best done by controlling each stage. The intervention is concerned with process rather than the solution.

9. Risk management

Problem solving activities provide an opportunity for children to take risks (both physical and emotional) in a controlled way. The risk-benefit model starts with identifying the positive reasons for wanting to do an activity. Having established it as worthwhile we then identify the key hazards that are likely to cause harm and put control measures in place to reduce the risk to an acceptable level. All activities should be risk assessed, and the process should be seen as an opportunity to involve children and young people in the process of enabling them to develop the key skills of:

- Responding to instructions
- Recognising and following relevant safety measures
- Identifying appropriate clothing, footwear and protection
- Lifting, carrying and using equipment safely
- Making safe decisions

10. Inclusion

Some activities will need to be adapted to enable all pupils to participate. Strategies will necessarily be specific to the particular situation, but some basic principles include:

- Building in rest areas
- Shortening courses
- Adapting equipment
- Creating multiple roles
- Applying whole group constraints that mirror particular disabilities
- Offering opportunities for participants to take on voluntary constraints (eg being blindfolded, using only one hand etc)

11. Process

Most problem solving sessions revolve around the Plan-Do-Review-Modify cycle.

- Brief the group – either written or verbal (see above)
- Give the group time to ask questions or clarify points with the teacher
- Groups plan. This may need intervention (see above).
- Groups 'do', modifying and planning if required
- Groups review what happened

12. Reviewing

How do we know if we have been successful? At the very least, an attempt should be made to match the objectives of the task with the outcomes. There is plenty of evidence that shows that if we review an activity and make the learning overt, then there is a much greater chance of retention and application of that learning. Reviewing can focus on the actual solution if that was a specific goal, but it is often better to focus on the process. Questions like 'Who did what?', 'What did you do well?', 'What could you have done better?', 'What would you do differently if you did the same task again?' will often elicit responses that automatically provide the goals for the next challenge.

There are many reviewing techniques, and assessment for learning strategies are as relevant with these activities outside as they are in the classroom.

See Roger Greenaway's website at http://reviewing.co.uk/_review.htm for a wealth of background and ideas.