

# Workstations

A Simple and Highly Engaging Team Communication and Problem-solving task



## NOTES FOR TEACHERS

Using Workstations to develop skills in logical and critical thinking and in the presentation of a structured argument.

Workstations is a very flexible, small team activity that can be used to achieve multiple learning objectives, as outlined in the support notes that are included in the pack. It has many elements within it that could be reviewed, including team-work, verbal communication skills and an introduction to personal learning styles. All of these areas are covered in the standard trainer's notes and can be applied, as they stand, in any student lesson.

However, Workstations is included in the activities specifically recommended for use in building 'employability' skills because of the way in which it develops logical and critical thinking skills.

Workstations is based upon a 5 x 5 matrix of information. When this information is used correctly, it allows the learners to use a process of elimination to find the answers to two tasks. It requires the learners to 'prove' any assumptions they make by providing evidence and it also requires them to develop a systematic approach to recording and managing a large volume of information and knowledge as it emerges

**Follow the instructions and run the activity exactly as described on the instruction cards in the pack for adult use.**

Workstations is an ideal exercise with which to make learners focus on logical and critical thinking. In a world in which information is readily available and easily accessible, much of it of dubious quality, it becomes even more important that students understand how to read and think critically. This helps them to be able to recognize the difference between fact and opinion, to be able to look for evidence based research, to test claims that do not have a body of proof and to understand fundamentally important differences, such as the difference between correlation and causation.

Workstations requires learners to:

1. Clarify their specific and limited objectives ie. identify their two tasks
2. Gather all the data and eliminate that which is non-essential in solving the problem
3. Prioritise, sort and classify the information
4. Work through the information in a step-by-step process, seeking evidence for each hypothesis they put forward
5. Reject any assumption that cannot be proven
6. Find solutions based upon the elimination of all other possibilities

# Workstations

A Simple and Highly Engaging Team Communication and Problem-solving task

## REVIEW

Suggested questions to use when reviewing Workstations

1. How quickly did you establish the two tasks that you had to achieve? Was this specifically asked for within the group, or did the tasks simply emerge as the information was shared?
2. Did you make any assumptions about the information you read? How did you test these assumptions?  
Teacher note: For example, participants often assume that the 'the canteen' is the same as 'the café' or that a particular employee will drive a particular car because of status or seniority
3. Did you have any specific method for sorting or classifying information? If so, what was this and how effective was it?
4. How did you make sure that no information was dismissed or overlooked? Trainer note: students sometimes dismiss some information as being irrelevant or 'a red herring'. This is incorrect: every piece of information is vital in proving their solutions.
5. When you thought that you had established 'facts' in the exercise, how did you test these to prove that they were true?
6. It is likely that some people in the group found it easy to follow the logic in this exercise and others found it harder. How effectively was that process of logical thought explained to others? How willing were people to admit they were unsure and to go back and check the logic of each decision?
7. How can you use the learning from this exercise in other areas of study? What parallels can you see in the type of thinking required here and in other areas of your work eg. in understanding scientific methods or in building coherent arguments in essay writing?

## A Simple and Highly Engaging Team Communication and Problem-solving task

### LEARNING SUMMARY

When reviewing and summarising the learning from the exercise, it may be useful to follow these steps in teaching critical thinking. Relate each of these to what happened during the exercise.

#### 1. Observe and draw conclusions.

Make detailed observations about objects or information, in order to be able to draw conclusions or make judgments based on those

In the exercise, this is about encouraging the students to look at all of the information, noticing for example that there is information about the location of a specific vehicle so they can draw conclusions about the ownership of that vehicle.

#### 2. Compare and contrast items and topics.

This allows students to tell the ways things are similar and different and helps them analyze and categorize information.

In the exercise this may be comparing the fact that there are 4 known pieces of information about one character but only two about another, which may help with the categorisation of the remaining information.

#### 3. Discuss and analyse the situation.

Have learners "retell" the story they have built up in their own words. This encourages them to summarize the main points of the task instead of just responding to specific questions with facts.

*In the exercise, this might be asking, "Can you tell me all the information that you have gathered about the chemist?" or "Why did you decide that the Research Lab was in that position?"*

Ask questions that do not have direct answers in the task. This makes the learners infer and draw their own conclusions based on their understanding of the situation.

*In the exercise, this might be asking, "How do you know that it must be Person X who drives the BMW? It doesn't tell you that anywhere in the information."*

#### 4. Encourage co-operation.

Providing cooperative learning opportunities will help learners develop critical thinking skills as they share ideas and learn from each another.

*In the exercise, this might be asking, "Can anyone else tell me any information I have missed about this person?" or "Can anyone find any reason why this is not so?"*

#### 5. Encourage and practise the 'Socratic' method.

Socrates was famous for teaching critical thinking through questioning. Encourage students to question their own thinking and each other in a way that requires them to defend and justify their arguments.

In the exercise, this might be asking, "Why is it not possible for the BMW driver and the chemist to be the same person?"

# Workstations

---

A Simple and Highly Engaging Team Communication and Problem-solving task

---

## LEARNING SUMMARY (CONT)

To conclude, encourage and practise argument analysis

1. Identify a problem or a premise or a statement to discuss.
2. Search or discuss possible solutions or counter-arguments.
3. Discuss how to judge the credibility of information.
4. Clarify the difference between opinion, judgment and fact