

## Activity 14. An Ethical Dilemma for Chemists

### Scenario 1

You are working for a company that produces a range of pharmaceuticals and toiletries based in Hepplesworth. You are responsible for the quality control testing of the raw materials for a particular product line. The new batch was late arriving and the production process has had to stop as a result. The delay is costing the company tens of thousands of pounds for every hour that production is halted. Your supervisor tells you to make this batch your top priority and that he wants to see your results from the batch as soon as you have tested it. He is under pressure from his boss and passes that onto you. You immediately start the testing procedure in the usual way.

As the results start to come through you realise the batch is well below the minimum standard quality that is permitted by the company. You take the first set of results to your supervisor and tell him the quality is below standard. He tells you that you have made a mistake in the testing procedure, to go away and run the tests again. You know you have not made a mistake, as you carried out the procedure in the same way you always do. To make sure that it isn't an error you run the tests again. The results are the same as the first set within the error. You go back to see your supervisor, he tells you that production must start again within one hour. He tells you to make sure you are able to pass the batch within the next hour.

The batch is below quality, you know it's not due to your testing method. You know the whole production process is waiting for this batch. Your supervisor has made it clear the only result he wants is that the batch is acceptable. He has also made it clear that if you continue to state it is below standard he will not take any responsibility but instead will blame your 'incompetence'. What are you going to do?

You should discuss as a group what you would do, why you have chosen that option and what the possible consequences of your actions may be.

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### Scenario 2

You are working for a company that produces a range of pharmaceuticals and toiletries based in Hepplesworth. You are part of a small team that works in regulatory affairs. It is part of your job to ensure that procedures and protocol are followed. For the first few months you are settling into the job and learning about the areas you have been assigned to. The team seems to get on well, however, when you are alone with one of the team members she is really patronising and offensive towards you. She is never like this in front of the others and you feel it is really unfair as you have always tried to be professional and pleasant towards her.

Her attitude gets much worse over the following weeks and months. You know, although are unable to prove it, that she is spreading malicious rumours about you. You cannot approach your supervisor as you know the management think this person is just wonderful and couldn't possibly believe anyone couldn't like her. Documents you have prepared have disappeared from your desk, you have missed meetings because she 'forgot' to tell you about them. You are becoming more and more stressed and start dreading going to work in the mornings. You are dispirited because if it wasn't for this person you know you would really enjoy your job and like your working environment. Just as you think it couldn't get any worse you learn that she is going to be promoted to the team leader, now she will be your manager.

What are you going to do?

You should discuss as a group what you would do, why you have chosen that option and what the possible consequences of your actions may be.

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### Scenario 3

You are working for a company that produces a range of pharmaceuticals and toiletries based in Hepplesworth. You are training to be a medical representative and are accompanying a senior representative on his visits to potential and existing clients. This representative is reputed to be the best in the company based on his sales figures. As a result of his success he and his family enjoy expenses paid holidays twice a year as part of the company incentive scheme. In addition, he benefits from considerable cash bonuses. You are pleased that you have the opportunity to 'learn the ropes' with someone who is clearly very good and professional.

All seems to be going well and you enjoy going out to meet clients and building contacts. In addition, you get advice on how to manage the paper work including expenses and dealing with sales figures and targets. At a late meeting with a client, your mentor leaves the restaurant early due to family commitments, leaving you to finish the meeting. As you stand to leave you notice he has left a folder on the chair. You scoop this up intending to return it the following day. As you walk across the car park you slip on the icy surface and the contents of the folder fall out. Mortified you quickly gather up the loose sheets of paper that are strewn around. As you do this you see written on one sheet a comparison between 'actual' and 'submitted' sales targets. The submitted figures are much higher than the 'real' figures. You sit in the car for a while and study the contents of the folder. The realisation dawns that the figures on which his bonus are based are grossly inflated. What are you going to do?

You should discuss as a group what you would do, why you have chosen that option and what the possible consequences of your actions may be.

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### Scenario 4

You are working for a company that produces a range of pharmaceuticals and toiletries based in Hepplesworth. Based in the medicinal design laboratory you are asked to confirm the accuracy of a colleague's results in order that the synthesis may be taken forward for further development. Each synthetic pathway is time consuming and you need to repeat the synthesis twenty times. Your colleague is very conscientious and has provided you with their laboratory note book with some comprehensive results. You feel confident that you will be able to achieve comparable results.

You have repeated the synthesis ten times and within the error your results agree with the earlier results. Your supervisor tells you that instead of a month to continue with the synthesis you now only have a further week to work on it. Initially you say you do not think it will be realistic to finish the remainder of the experiments in this time. He tells you that you must, as the area manager will be visiting and will want to see the results in a week. You leave his office knowing in the time available you cannot complete another ten of the lengthy synthetic routes. What are you going to do?

You should discuss as a group what you would do, why you have chosen that option and what the possible consequences of your actions may be.

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### Scenario 5

You are working for a company that produces a range of pharmaceuticals and toiletries based in Hepplesworth. You are based in the NMR laboratory where you work with one other person and your supervisor. It is your job to analyse samples sent by the medicinal drug discovery laboratories, confirming structural integrity of the samples.

One laboratory is working particularly hard, sending through more samples than usual. They feel they are close to identifying a lead compound that can be taken forward for further development. You offer to start work early and stay late for the next few weeks to help clear the backlog of samples. As you work the additional hours you notice that structurally there appears to be a discrepancy between what the laboratory state and the results you are getting. You analyse the results in great detail and are convinced that you have seen something that the laboratory are missing. You share your thoughts with your colleague and point out what you think is the problem. Your supervisor is away for the week and you are taking two days of holiday, so you decide to raise the issue with him the following week.

When you return on Tuesday you find, to your complete disbelief, that your colleague has already told your supervisor about the discrepancy and has taken the credit for working it out. Even worse, your colleague is going to be promoted on the strength of work that you did but that he is taking the credit for. You go to see your union representative to ask for advice. She tells you that it would be difficult to bring a case. As you are starting out in your career you could get labelled as a 'whistle blower' causing you to struggle for references and future opportunities. What are you going to do?

You should discuss as a group what you would do, why you have chosen that option and what the possible consequences of your actions may be.

## Activity 14. An Ethical Dilemma for Physicists

### Scenario 1

You are working for a company that produces a range of medical devices based in Hepplesworth. You are responsible for the quality control testing of the tensile strength of raw materials for a particular product line. The new batch was late arriving and the production process has had to stop as a result. The delay is costing the company tens of thousands of pounds for every hour that production is halted. Your supervisor tells you to make this batch your top priority and that he wants to see your results from the batch as soon as you have tested it. He is under pressure from his boss and passes that onto you. You immediately start the testing procedure in the usual way.

As the results start to come through you realise the batch is well below the minimum standard quality that is permitted by the company. You take the first set of results to your supervisor and tell him the quality is below standard. He tells you that you have made a mistake in the testing procedure, to go away and run the tests again. You know you have not made a mistake, as you carried out the procedure in the same way you always do. To make sure that it isn't an error you run the tests again. The results are the same as the first set within the error. You go back to see your supervisor, he tells you that production must start again within one hour. He tells you to make sure you are able to pass the batch within the next hour.

The batch is below quality, you know it's not due to your testing method. You know the whole production process is waiting for this batch. Your supervisor has made it clear the only result he wants is that the batch is acceptable. He has also made it clear that if you continue to state it is below standard he will not take any responsibility but instead will blame your 'incompetence'. What are you going to do?

You should discuss as a group what you would do, why you have chosen that option and what the possible consequences of your actions may be.

## Activity 14. An Ethical Dilemma for Physicists

### Scenario 2

You have joined a graduate training scheme for the accountancy firm GES based in Hepplesworth. You are receiving training to develop your IT knowledge and on completion you will become an IT consultant for this company. For the first few months you are settling into the job and learning about the areas to which you have been assigned. The small team you are placed with seems to get on well, however, when you are alone with one of the team members she is really patronising and offensive towards you. She is never like this in front of the others and you feel it is really unfair as you have always tried to be professional and pleasant towards her.

Her attitude gets much worse over the following weeks and months. You know, although are unable to prove it, that she is spreading malicious rumours about you. You can not approach your supervisor as you know the management think this person is just wonderful and couldn't possibly believe anyone couldn't like her. Documents you have prepared have disappeared from your desk, you have missed meetings because she 'forgot' to tell you about them. You are becoming more and more stressed and start dreading going to work in the mornings. You are dispirited because if it wasn't for this person you know you would really enjoy your job and like your working environment. Just as you think it couldn't get any worse you learn that she is going to be promoted to the team leader, now she will be your manager.

What are you going to do?

You should discuss as a group what you would do, why you have chosen that option and what the possible consequences of your actions may be.

## Activity 14. An Ethical Dilemma for Physicists

### Scenario 3

You are working for a company that produces a range of medical devices based in Hepplesworth. You are training to be a sales representative and are accompanying a senior representative on his visits to potential and existing clients. This representative is reputed to be the best in the company based on his sales figures. As a result of his success he and his family enjoy expenses paid holidays twice a year as part of the company incentive scheme. In addition, he benefits from considerable cash bonuses. You are pleased that you have the opportunity to ‘learn the ropes’ with someone who is clearly very good and professional.

All seems to be going well and you enjoy going out to meet clients and building contacts. In addition, you get advice on how to manage the paper work including expenses and dealing with sales figures and targets. At a late meeting with a client, your mentor leaves the restaurant early due to family commitments, leaving you to finish the meeting. As you stand to leave you notice he has left a folder on the chair. You scoop this up intending to return it the following day. As you walk across the car park you slip on the icy surface and the contents of the folder fall out. Mortified you quickly gather up the loose sheets of paper that are strewn around. As you do this you see written on one sheet a comparison between ‘actual’ and ‘submitted’ sales targets. The submitted figures are much higher than the ‘real’ figures. You sit in the car for a while and study the contents of the folder. The realisation dawns that the figures on which his bonus are based are grossly inflated. What are you going to do?

You should discuss as a group what you would do, why you have chosen that option and what the possible consequences of your actions may be.



## Activity 14. An Ethical Dilemma for Physicists

### Scenario 4

You are working for a company that produces a range of medical devices based in Hepplesworth. Based in the material design laboratory you are asked to confirm the accuracy of a colleague's results in order that a novel device for detecting blood glucose levels may be taken forward for further development. The device relies on a fibre optic sensor that must be accurately aligned. You are asked to align the fibre and analyse the results obtained for each removal and replacement of the fibre sensor. Undertaking this is time consuming and the replica results need to be within a very small error range for the device to be deemed as suitable. Your colleague is very conscientious and has provided you with their laboratory note book with some comprehensive results. You feel confident that you will be able to achieve comparable results.

You have repeated the fibre alignment ten times and within the error your results agree with the earlier results. Your supervisor tells you that instead of a month to continue with the work you now only have a further week. Initially you say you do not think it will be realistic to finish the remainder of the experiments in this time. He tells you that you must, as the area manager will be visiting and will want to see the results in a week. You leave his office knowing in the time available you cannot complete the number of replicate experiments that you have been asked to do. What are you going to do?

You should discuss as a group what you would do, why you have chosen that option and what the possible consequences of your actions may be.

## Activity 14. An Ethical Dilemma for Physicists

### Scenario 5

You are working for a company that produces a range of pharmaceuticals and toiletries based in Hepplesworth. You are based in the Chemometrics laboratory where you work with one other person and your supervisor. It is your job to design computer programs to aid the interpretation of data for automated systems.

The imminent production of a new drug needs a program to be written to allow full process automation to begin at the earliest opportunity. You offer to start work early and stay late for the next few weeks to help develop the program. As you work the additional hours you notice there is a similarity between this process and several others that are undertaken at other plants but are produced without the aid of automation and are less cost effective. You analyse these processes in great detail and are convinced that you have seen something that has been missed previously. You share your thoughts with your colleague and point out what you think the solution is. Your supervisor is away for the week and you are taking two days of holiday, so you decide to raise the issue with him the following week.

When you return on Tuesday you find, to your complete disbelief, that your colleague has already told your supervisor about the possible improvements to the current systems and has taken the credit for working it out. Even worse, your colleague is going to be promoted on the strength of work that you did but that he is taking the credit for. You go to see your union representative to ask for advice. She tells you that it would be difficult to bring a case. As you are starting out in your career you could get labelled as a 'whistle blower' causing you to struggle for references and future opportunities. What are you going to do?

You should discuss as a group what you would do, why you have chosen that option and what the possible consequences of your actions may be.

## Meta data

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Author (s)	Della Grice, UK Physical Sciences Centre
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Title	Ethical dilemma exercise
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Keywords	ukoer, sfsoer, employability, ethical dilemma, career progression
Description	This resource is student activity 14 as part of a broader resource called the Employability Resource Pack. There is a brief tutor guide to accompany this resource.
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