



# Mark Scheme (Results)

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Pearson BTEC Nationals  
In Forensic and Criminal Investigation (20151K)  
Unit 7: Applications of Criminal and Forensic  
Investigation

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## Unit 7: Applications of Criminal and Forensic Investigation

### General marking guidance

- All learners must receive the same treatment. Examiners must mark the first learner in exactly the same way as they mark the last.
- Mark grids should be applied positively. Learners must be rewarded for what they have shown they can do rather than be penalised for omissions.
- Examiners should mark according to the mark grid, not according to their perception of where the grade boundaries may lie.
- All marks on the mark grid should be used appropriately.
- All the marks on the mark grid are designed to be awarded. Examiners should always award full marks if deserved. Examiners should also be prepared to award zero marks, if the learner's response is not rewardable according to the mark grid.
- Where judgement is required, a mark grid will provide the principles by which marks will be awarded.
- When examiners are in doubt regarding the application of the mark grid to a learner's response, a senior examiner should be consulted.

### Specific marking guidance

The mark grids have been designed to assess learners' work holistically.

Rows in the grids identify the assessment focus/outcome being targeted. When using a mark grid, the 'best fit' approach should be used.

- Examiners should first make a holistic judgement on which band most closely matches the learner's response and place it within that band. Learners will be placed in the band that best describes their answer.
- The mark awarded within the band will be decided based on the quality of the answer in response to the assessment focus/outcome and will be modified according to how securely all bullet points are displayed at that band.
- Marks will be awarded towards the top or bottom of that band depending on how they have evidenced each of the descriptor bullet points.

## Activity 1

### Indicative Content Summary (to be expanded and used alongside mark scheme for live papers)

Summary Indicative Content
<p>Activity 1 requires learners to discuss different approaches to Toby's behaviour, and there are a variety of explanations students could use. These are the most likely:</p> <p><b>Biological approach:</b></p> <p>XYY</p> <ul style="list-style-type: none"> <li>• XYY is a rare chromosomal disorder that affects males. It is the presence of an extra Y chromosome. Normally boys have XY and girls have XX.</li> <li>• Boys with XYY tend to be very tall. Toby is 6 foot 3 inches and is therefore very tall. He is also likely to still be growing as he is 15 years old. Studies have shown that the average height of someone with XYY is 6 foot 3 inches by adulthood.</li> <li>• Boys with XYY can have learning disabilities. Toby's parents describe him as 'behind with learning' and the other boys in the gang call him 'thick'. Toby is described as needing additional support at school so this could be because of XYY.</li> <li>• However, some studies show that intelligence is usually in the normal range, although it tends to be on average 10–15 points lower than siblings. Toby is described as needing extra support at school, whereas his brothers have both been to university. This could be because he has XYY and has a lower IQ than his brothers.</li> <li>• Sometimes boys with XYY can have an explosive temper (he hit the man repeatedly) and can be hyperactive (Toby's dad described him as always being lively).</li> <li>• Figure 1 shows that males with XYY were more likely to be convicted of a crime.</li> <li>• However, this didn't become different to non-XYY males until they were around 23–25 years of age. So Toby being arrested once may not be because of XYY it may be because of other factors such as testosterone or a non-biological reason.</li> </ul> <p><i>Hormonal influences – Testosterone</i></p> <ul style="list-style-type: none"> <li>• Hormones are chemical messages that transmit information around the body. Testosterone is a hormone. It is an androgen – a chemical that develops or maintains male characteristics.</li> <li>• Toby is a boy and he is therefore affected by testosterone.</li> <li>• During adolescence higher testosterone levels have been associated with increased aggression. This was shown by van Bokhoven et al (2006) who studied a group of 96 boys aged between 12 and 21 years of age. They found that at age 16 boys who had a criminal record had higher levels of testosterone.</li> <li>• Given Toby is 15, and there is an increase of testosterone in puberty for boys, so it is possible that his aggression is linked to high levels of testosterone.</li> </ul>

- Dabbs (1996) found that aggressive boys, violent criminal and military offenders all had high levels of testosterone.

**Non-biological approach:**

*Social learning approaches (A3) – Maternal deprivation and parenting*

*Bowlby – 44 juvenile thieves*

- Bowlby developed attachment theory. He said that we are born with an innate need to attach to a primary attachment figure, typically the mother.
- Bowlby says that a child needs a close bond with just one attachment figure. He says that a breakdown in this maternal attachment would lead to serious negative consequences. He said this can lead to affectionless psychopathy.
- Toby's mother left him to be cared for by his father when she was seriously ill. She stated she found it difficult to bond with him. So, he may not have experienced the warm, consistent bond that he needed.
- Even though Toby's mum did not choose to leave him, Toby may have experienced maternal deprivation.
- Bowlby said that one of the long-term consequences of maternal deprivation may be affectionless psychopathy. This is where the child is not able to show empathy/concern for others.
- This might be why Toby commits crimes because he doesn't have empathy/show concern for others. He also doesn't show any distress when his mum is upset and crying.
- Bowlby did a study called 44 juvenile thieves. He compared 44 thieves with 44 non-thieves.
- He collected data via interviews and questionnaires.
- He found that 17/44 thieves had experienced early prolonged separation from their mothers before five years.
- He found that 15 of those 17 had no guilt or remorse (affectionless psychopaths).
- He found that only two of the non-thieves had the same separation.
- Bowlby therefore said that there is a link between disruption to attachments in the first five years and later maladjustment such as criminal behaviour.
- Toby experienced disruption to his attachments before the age of five. This may have impacted further as his mother was never fully able to care for him in the way she did for his brothers. This might be why he commits criminal behaviour.
- Toby might be an affectionless psychopath because he doesn't show guilt or remorse for his behaviour.

*Behavioural approaches (A4) - Modelling*

It is anticipated that learners may be able to identify that Toby's behaviour has been affected by modelling. Learners may provide points such as:

- Social learning theory (SLT) states that most behaviour involves learning through modelling. It states there are four stages: Attention: a person observes and pays attention to the behaviour; Retention: they remember the behaviour; Reproduction: they reproduce the behaviour; Motivation: they are motivated to reproduce the behaviour due to a reward.
- Bandura's bobo doll experiment (1961) found that children who viewed an

aggressive model were more likely to behave aggressively towards the bobo doll, compared to the group of children who did not view an adult acting aggressively.

- Toby has seen members of his gang commit crimes (attention) and he has remembered this (retention). He likes the praise he gets when he does something the older boys ask him to (vicarious reinforcement) Toby then keeps reproducing the behaviour to get the same benefit.

*Learners may also include responses using superior and inferior grouping, identity formation. There may also be others used.*

## Activity 2

### Summary Indicative Content

Activity 2 requires learners to recommend and justify a treatment programme, and there are a variety of treatments that may be appropriate. These are the most likely (Note that the questions require a treatment programme – learners with the highest marks are likely to combine more than one approach):

#### Cognitive therapy (C1)

- Cognitive therapy includes counselling, which can help Toby understand his thoughts and feelings. It may also help him understand more about his condition (XYY) and help him understand his behaviours.
- It may help him draw links between his thought processes and offending behaviour, which may change his future behaviour in similar situations.
- Cognitive therapy can be particularly effective for low mood and anxiety, which he may experience due to having a genetic condition that has no cure.
- Counselling may help Toby manage his impulsivity and mood.

#### Anger management programmes (C2)

- Anger management, such as CALM, aims to change the way an offender thinks and acts.
- There are three stages:
  - Cognitive preparation –offenders are encouraged to identify their triggers and reflect on past behaviours. For Toby this will include thinking about what made him angry before he acted aggressively and what his triggers may have been. It may also help him think about why he followed the lead of the other boys.
  - Skill acquisition - offenders are taught a range of techniques and skills to avoid triggers and deal with situations differently. Toby will be taught ways he can control his own emotions rather than being controlled by them. For example, counting to 10.
  - Application practice – offenders practise their new skills by role play. Toby will role play an emotional situation with his therapist using his new skills.
- The therapist will then positively reinforce successful strategies.
- Howells et al (2005) aimed to see whether anger management is more effective than no treatment. He found that there was more improvement in controlling their anger for the treatment group (by 1.5) than the control group (0.5).
- Howells et al also found that there was more improvement in their understanding of anger (1.8) compared to the control (0.95).

#### Drug treatment:

- Drug treatment is aimed at addressing hormonal imbalances and changing behaviour.
- Anti-depressants may help regulate Toby's serotonin levels and may improve his mood and anxiety. This may mitigate some of the impact of high testosterone by balancing his hormones.
- Risperidone may be used to reduce aggression (Le Blanc et al). This was found to be more effective for boys with a below average IQ, which Toby may have because he has found school difficult.

### **Diet (C5)**

- It would be helpful for Toby to have a full blood screening for vitamin and mineral deficiencies. This would identify if he needed any supplements. Toby would need to go to see a doctor to have some blood tests.
- Toby may also need his blood sugar levels checking.
- Gesch et al found that using vitamins, minerals and essential fatty acids helped reduce antisocial behaviour in young male prisoners.
- Although Toby has not yet been given a custodial sentence, it may be helpful to assess whether these supplements may help reduce his level of aggression.

*Learners may also use other behavioural treatments, counselling therapies or drug treatment.*



### Activity 3a

<b>Summary Indicative Content</b>
<p>Learners may identify a range of features from Section B1. They need to provide specific evidence from the case study to support their choice.</p> <p>Profiling feature: A profiling feature may be that there is more than one offender.</p> <p>Evidence from case study: The victims describe them as operating in pairs, and the CCTV evidence has shown two individuals together.</p> <p>Profiling feature: A profiling feature may be that the perpetrators are female.</p> <p>Evidence from case study: Shoplifting is an offence that is more likely to be undertaken by a woman.</p> <p>Profiling feature: A profiling feature may be that this is a group of offenders.</p> <p>Evidence from case study: Although only two perpetrators are seen together, the victims describe them as looking different to each other so it may be there are a number of perpetrators working together in an organised way.</p> <p>Profiling feature: A profiling feature may be that the perpetrators are unemployed.</p> <p>Evidence from case study: The crimes all happen during normal working hours and they may be stealing the meat because they are selling it on because they don't have a reliable income.</p> <p>Profiling feature: A profiling feature is the high frequency of the crime committed.</p> <p>Evidence from the case study: The crimes have been continuous over the last three months. They are not one-off crimes.</p> <p>Profiling feature: A profiling feature may be the consistency of this behaviour pattern.</p> <p>Evidence from the case study: The incidents all follow the same pattern and include the same details. This shows consistency of behaviour.</p> <p>Profiling feature: A profiling feature may be that the perpetrators live in the local area.</p> <p>Evidence from the case study: The incidents have all taken place within the same three square mile radius – this indicates the perpetrators are familiar with the local area.</p> <p>Profiling feature: A profiling feature may be that the perpetrators have committed previous crimes</p> <p>Evidence from the case study: The perpetrators have shown forensic awareness by their faces not being captured on CCTV, disguising their features (variable hair description) and wearing gloves.</p>

*Learners may provide a range of responses. There are no clearly wrong answers, and responses should be credited when it is plausible in line with the case study.*

## Activity 3b

### Summary Indicative Content

Learners will use a variety of elements from Section B to assess the usefulness of offender profiling. Typically, this will be focused on Section B2, although they may draw on elements from B1.

#### Useful

- The pattern of crime indicates that the perpetrators are female and live in the local area. This will narrow the range of suspects and help police identify the perpetrator.
- Canter's geographical profiling is based on scientific processes including statistical analysis. Profiling that the perpetrator lives within a smaller geographical area (rather than nationally led crime) would be reliable and make the profile useful.
- Knowing that the perpetrators may be acting in a group helps police with interviewing techniques. The perpetrators may be trying to cover their tracks by different people undertaking the crimes on different days. When police interview one of them they may be able to get the interviewed perpetrator to give up their accomplice/s so that they do not receive such a long sentence.
- Because of the consistency of behaviour and the profile compiled, police may be able to warn potential victims, suggesting local businesses put additional measures or deterrents in place and reduce the risk of more people being affected.

#### Not useful

- Offender profiling is educated guesswork and may lead to reduced resources focused on finding the real offender.
- This profile narrowed down the suspects to a common demographic in the local area so it is not useful as it doesn't narrow the profile significantly. Just because the crimes have all taken place in the same three square mile radius doesn't mean that the perpetrators live nearby. They may live in a local village and be commuting in to the urban area so they are not recognised.
- The profile suggests there are multiple offenders, however there could be only two offenders always working together. They may be using the same MO and using the same strategy that works.
- The profile suggests that they are unemployed because they commit crimes during normal office hours, however they could work shifts.
- The profile suggests that the offenders are female, although there is no evidence in the information to suggest that they are not male or a mixed group/pair. Further interviewing of victims could take place.

### Judgement

- It is helpful as it helps to narrow the suspects down and provides support for identifying the offender and in terms of interview techniques. This means that the profile will help police in multiple ways.
- The profile is helpful as it gives enough detail in relation to consistency and pattern of crimes to help reduce the risk to potential victims.
- As the profile shows that the perpetrators are targeting local businesses, deterrents and extra patrols could be put in place.
- The profile could be written in a number of ways, this means that it may not be helpful, as it may reduce the likelihood of catching the offender if the first profile is wrong.

*Learners will give a range of answers. Credit answers that consider the usefulness of the offender profile they have created.*

*Generic answers on the usefulness of offender profiling should be reflected in the marks given.*

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